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ABSTRACT

This report outlines ways in which health education strategies can be developed within an ambulatory care center and how they can be implemented to optimize their effectiveness and efficiency. Section 1 describes a program planning model for use in the development of health education programs. Sections 2 through 5 trace the consumer through four aspects of an ambulatory care center's program, focusing on the important opportunities for consumer health education. These four sections respectively cover (1) recruitment, (2) utilization, (3) prevention, and (4) adherence to regime. Within each of these sections, the major elements of the problems are analyzed, and suggestions are made concerning program strategies designed to deal with them. Administrative issues inherent in health education programs are presented in the sixth section, followed by a summary (section 7) outlining the basic health education principles applicable to all programs in ambulatory care centers. For those who wish additional information on health education programs in ambulatory care settings, the last section presents an annotated bibliography consisting of seventy-five references. A survey form being used by the American Public Health Association to collect descriptive information on health education elements in health programs is appended. (EM)

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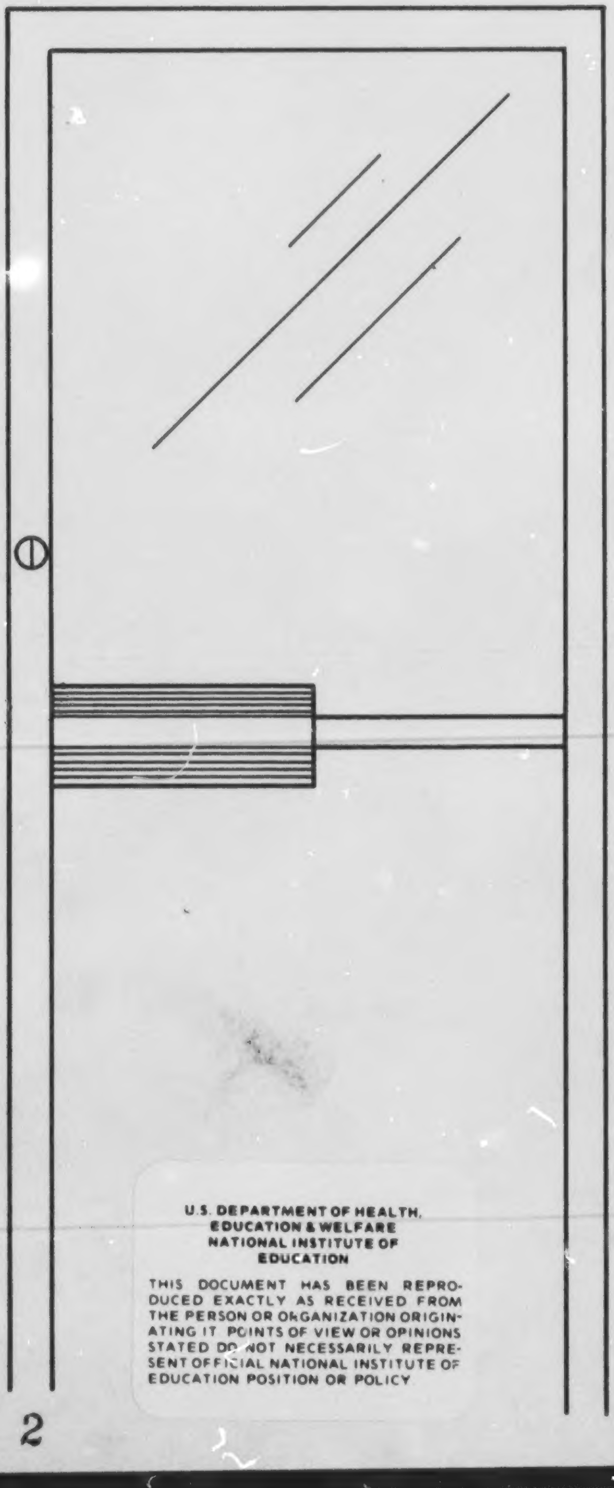
A GUIDE TO HEALTH EDUCATION IN AMBULATORY CARE SETTINGS



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Introduction

The primary goal of health education in ambulatory care centers is to enable individuals to cooperate and participate with professional health personnel actively, intelligently and consistently in processes involved in the prevention and treatment of disease. Individuals can acquire needed knowledge and sound attitudes, by guiding them in decision-making and acceptance of responsibility for their own health, and by helping them translate such decisions into health-supportive behavior patterns and life styles. Health education may also have as its goal the reduction of the costs of health services and more appropriate use of such services and the resolution of community health problems.

Purpose of this Report

The purpose of this report is to outline ways in which health education strategies can be developed within an ambulatory care center and how they can be implemented so as to optimize their effectiveness and efficiency. It should be noted that, depending on the nature of the problem and its causes, any one or more of a variety of approaches may be indicated. To illustrate, in relation to the problem of appointment breaking, steps to be taken may be administrative-managerial, e.g. changing clinic hours, speeding up patient flow; they may be in the area of personnel attitudes and behavior, e.g. training personnel in how to make patients feel more at ease; or, they may be in the realm of patient education, e.g. improvement of staff-patient communication, paying more attention to the individual patient's personal difficulties in keeping appointments. This guide to health education programming deals with the diagnosis of the underlying causes, whatever these may be, but also focuses on some educational solutions to such problems.

Many of the procedures suggested can be introduced into a care setting without any or at least without more than very modest investment of additional resources and yet may yield considerable and tangible results. Others may require extra funds and manpower. Generally, increments in the investment of efforts and resources are likely to result in greater returns, especially if they are initiated not on an ad-hoc and fragmented basis, but in a systematic, coordinated manner and are integrated into the total operation of the care center - a point that cannot be stressed enough.

Scope of the Report

The report identifies and discusses several of the most important opportunities for consumer health education within an ambulatory care setting. It does so by tracing the consumer through four aspects of the center's program.

1. Recruitment of the consumer into the center
2. Proper utilization of the center's resources
3. Prevention of illness
4. Treatment of illness which does occur by adherence to a medical regimen

The report begins with a description of the use of a program planning model for health education programs (Section I). Those already skilled in using such a model may wish to skip this section and go directly to the individual sections (Section II-V) dealing with recruitment, utilization, prevention, and adherence. Within each of these sections, the major elements of the problems are analyzed and suggestions made concerning program strategies designed to deal with them. An outline of administrative issues inherent in health education program is included in Section VI followed by a summary (Section VII) outlining the basic health education principles applicable to all programs in ambulatory care centers. This report can only highlight the most important elements of programs in these settings. For those who wish additional information, an annotated bibliography (Section VIII) has also been included.

Section I

Health Education Program Planning Model

All types of educational experiences take place in ambulatory care centers, and many are adequate to meet the needs of the health consumer. It is much more likely, however, that the majority of the educational experiences which should take place do not; and, in many cases what the consumer does learn may be detrimental to his health and the functioning of the center. Patients, for example, quickly learn to avoid extended waiting times, often in ways which wreak havoc upon the entire scheduling system. Lack of understanding or disrespect on the part of staff is perceived quickly and may result in drop-outs or the withholding of important information. Since the acquisition of new knowledge or the reinforcement of previous learning takes place during every encounter with the health care provider, health education programs must reduce the amount of undesirable learning which takes place while ensuring that all opportunities for desired learning are utilized.

Unplanned, haphazard educational experiences do not ensure that learning takes place or that an environment is created which is conducive to changing negative or reenforcing positive health behavior. Furthermore, evaluation of intermittent and unplanned efforts is difficult and does not provide good data on the program's continuing effectiveness. A planned and systematic approach to the development of a health education program ensures examination of the many alternatives available and results in a more rational allocation of resources and a higher probability of success.

The program planning model described below provides a framework within which effective program development can occur. Because this model is likely to be familiar to those already involved in the development and implementation of health programs, they may wish to skip this discussion and go directly to the materials which they can utilize in Sections II to V. There are nine basic steps in the development of any health education program:

1. Development of support for health education
2. Designation of one individual responsible for the program
3. Identification of major health problems
4. Behavioral diagnosis
5. Setting priorities
6. Development of goals and objectives
7. Development of the program strategy
8. Implementation
9. Evaluation

Step 1 - Development of Support for Health Education

The development of support for health education as an integral component of the ambulatory care center's services is essential. This support may develop because of contact with other programs, the current literature, requirements imposed by funding sources, training programs, or the general heightened awareness of its importance among health care providers. Many health education programs begin as the idea of one individual. Successful implementation of the idea, however, depends upon that individual's ability to convince others, especially the community, of its worth and through them to mobilize the necessary resources[1], such as, public schools, voluntary agencies, and other community agencies.

Ignorance concerning the potential of health education programs and general apathy concerning their implementation are two major obstacles which must be overcome or their negative effects lessened. Individuals and entire institutions often feel threatened by new program initiatives which are likely to modify or in some cases significantly change their method of operation.[2] Therefore, anyone interested in developing health education programs must be able to identify rather quickly potential groups of support or resistance among staff, governing structure, consumers and other organizations and to develop strategies to increase their interest, obtain their active support, or minimize the effects of their resistance. These strategies will most probably be a mix of information-giving, community organization, politics, public relations, and education and will be directed at those with the power and authority to make critical program decisions, those who will reinforce these decisions, and those who will implement the program.[3] The following recommendations may prove helpful.

a. Optimum educational programming should be the overall goal. The most efficient way to reach this goal is to ensure that all staff members learn to provide the best possible health education experiences given their particular duties and skills. Continuing assurances that the program is designed to help them carry out their responsibilities more efficiently and effectively, not to eliminate them or to unduly interfere, are often essential.

b. Strategies for gaining support must be developed on the basis of the staff's needs as they perceive them with an emphasis on the use of health education as a problem solving technique. Appropriate non-threatening situations should be used to identify problems which are amenable to educational interventions. Administrators, for example, may be interested because of problems they are having with rising costs, patient dissatisfaction, overutilization, or funding requirements. Physicians may be interested in problems of compliance with regimen, the use of preventive health measures, malpractice, and issues of informed consent. The receptionist or appointment secretary may wish to learn how to handle phone requests or to decrease the number of walk-ins and broken appointments.

Following identification of their interests, they should receive information concerning possible solutions, notification of training sessions or workshops on these issues, and other available resources. Physicians, nurses, outreach workers, and pharmacists, in particular, should receive copies of recent articles describing their roles in health education.

c. Current interest in health education should be maximized by publicizing efforts such as the national health education legislation, the growth in reimbursement systems for health education, and the increased importance of preventive services.

d. Efforts to develop, buy, or otherwise provide materials such as pamphlets and audiovisuals should be discouraged unless a need for them has been identified after a careful assessment of current resources and development of specific goals and objectives.

Step 2 - Designation of one individual with primary responsibility for the overall planning and implementation of the health education program

Although many individuals will be involved in the development of the health education program, one individual, the Educational Specialist, should be given the responsibility and authority for the overall program. In large programs there may be many persons who could function in this capacity while in small programs this individual often splits his time among other activities.

Rarely should this individual be involved in actual patient teaching unless the staff is so small that no one else is available. Instead, his responsibility should be to provide whatever support is necessary to ensure that all others involved in delivering ambulatory care are providing the best possible positive learning experiences to their patients, family and the community-at-large. Therefore, it is essential that the position of Educational Specialist be placed at a level within the organization's structure which cuts across all program lines and which ensures the power and authority to effect changes in all the educational components of the clinic. The best arrangement is one in which the Specialist serves as an assistant to the Executive Director. The least effective is the placement of a Division of Health Education within a separate department such as social services or nursing. Placement of the position at a high level within the organization chart helps to minimize the friction which occurs when one parallel unit attempts to direct the activities of another.

The Specialist should possess certain skills. The following is a list developed for use in an HMO setting but it is equally applicable to other ambulatory care centers.

a. "up-to-date knowledge of learning theory and practice particularly as applied to adult learning

b. detailed knowledge of and experience with group process methods and the principles of group dynamics in various types of educational settings

c. current knowledge of educational technology such as the selection and use of programmed instruction, audio-visual aids and devices, etc.

d. current knowledge, and preferably actual experience with the application of various behavior change strategies and methods...

e. skill in written and oral communications...

f. knowledge (of) health...., disease,...and the delivery of medical care...,

g. managerial skills

h. image of oneself as competent, flexible, persistent, and possessing originality."[4]

No degree requirements ensure that an individual possesses such skills. Individuals who have had training and/or experience in education, health delivery and management, however, are likely candidates, in particular, those with training or experience in health education, nursing, social work, or community organization.

The remaining steps should be taken in developing all levels of the program, from the overall plan for the entire institution to the activities developed for one particular patient. The degree and type of detail which is needed will depend upon the individual problem which is being addressed.

Step 3 - Identification of Major Health Problems

No matter how small or large the scope of center activity, specific problems which adversely affect the health status of current or potential consumers of the center's services must be identified through a broad system of analysis. If attempts are not made to examine all problems initially, then the program development process will quickly focus on too narrow or inappropriate a strategy. This is especially true in health education programs where the temptation is to conduct a very limited analysis followed by the use of a very narrow selection of easily available materials, e.g. a film, pamphlet. A wide-ranging examination process ensures identification of the many and complex elements of what at first glance may appear to be a very simple problem or set of problems.

Unfortunately, in very few instances do providers or consumers have the luxury of actually examining all the problems which adversely affect the consumer's health. Although all centers should strive to provide opportunities for broad problem analysis, any number of constraints restrict the center's ability to concentrate on the real needs of the consumers.

Step 4 - Behavioral Diagnosis

Each problem identified in the previous step must be analyzed on the basis of the individual behavior patterns which encourage or inhibit its resolution. The behavior may be that of the consumer, the provider, or others who have a significant impact on the problem.

The first objective is to determine the psychological, social, cultural, economic, educational, demographic and environmental determinants of the behavior. Many of such characteristics are important for analysis but cannot be changed, e.g. sex, age, economic status. However, the behaviors which tend to arise as a result of these factors are a proper subject for analysis.

The second objective is to identify those determinants which could most readily be utilized to promote or reinforce desirable behavior or discourage undesirable behavior. For example, environmental factors such as clinic hours, availability of certain services and other may be changed easily compared to changing an individual's lifestyle.

Several tools are available to determine variables affecting personal health behavior.[5] A social science framework which could be utilized, the health belief model, refers to these variables as modifying factors of health behavior and divides them into categories such as demographic, socio-psychological, and structural.[6] Another system of analysis developed for use in ambulatory care settings[7] has been adapted for use in health education programming.[8] This system classifies factors which contribute to behavior as predisposing, reinforcing and enabling.

Predisposing factors are "those social and psychological forces that cause an individual or group to want to take or not take the action in question."[8] They include: socio-demographic correlates, including age, sex, education, marital status, family size, race, and religion;[9] socio-psychological correlates including health beliefs and attitudes, knowledge and sources of health care information, perceived susceptibility, seriousness, chance of recovery, psychological readiness, psychological and structural stresses (including fear, anxiety, social isolation, and powerlessness);[10] and, previous health behavior.

Enabling factors determine the "availability and accessibility of specific resources necessary to take the behavior in question."[8] These include: economic correlates such as occupation, income, cost of services, and coverage; organizational correlates such as group practices or comprehensive health services; and, availability of care, which may include clinic hours, transportation, or geographic location.[11,12]

Reinforcing factors are "those influences over which a health professional or the staff of an agency have some control in determining whether a given action on the part of the patient or consumer population is rewarded or punished."[8] Included is an analysis of the behavior and attitudes of the providers.

Additional information concerning use of these social science tools is included in the references cited above.

Step 5 - Setting Priorities

After the major problems have been identified and the behavioral diagnosis completed, a two step process of elimination must take place. First, all those problems over which the center with its many resources has no control are eliminated. Second, all those problems for which, on the basis of the best medical expertise, there are no significant behavioral elements are eliminated.

This process does not mean that the problems which have been eliminated are any less important, only that they are outside the scope of a health education program of the center. It is particularly difficult to delineate the extent of the role which the health education program should assume in attempting to change behaviors of those outside the center, in particular, efforts at community development and organization. Behaviors may mean not just those of the center staff and consumers but those others who have significant impact upon their health status. Community problems such as environmental or housing problems require an approach in which the center must involve itself in achieving organized community effort to seek solutions.

Following this elimination procedure, the problems must be ranked numerically. The criteria for establishing the priorities should be developed jointly by providers and consumers and should be based not just on known contraints such as financing and staff but also upon the importance of the problem, its severity, and frequency.

Step 6 - Development of Goals and Objectives

Based on the behavior which is to be changed or reinforced, goals and objectives are established for the total program and each of its individual activities. Goals are statements of broad direction. They are "general and timeless, that is, not concerned with a specific achievement within a specified time frame" and they provide no criteria for measurement or evaluation. An example of a goal for a recruitment program might be: to recruit more individuals into the center in order to provide them with comprehensive care and to provide a firm financial basis for the center. Objectives are "more specific, more definite, desired accomplishments which can be measured within a given time frame." The achievement of an objective "advances the system toward a corresponding goal." Objectives must "support and contribute" to the achievement of the goals. Objectives must include who, what, when and measurement criteria.[2] An example of an objective might be as follows: within six months, the mothers, fathers, babysitters, or others responsible for the health of children ages birth to 10 years of age living in census tract XX bounded by Elm and Oak and 1st and 32nd Streets will bring 50% of those children into the clinic for screening services. This objective will be achieved by staff outreach within the schools and by initiating a door-to-door campaign. Results will be measured by comparisons of the number of children within this age group living in the census tract and the number of children who receive screening services within the six month period.

Step 7 - Development of the Program Strategy

The program strategy determines how and where[2] objectives will be met. Creativity is most important at this step, and care should be taken to promote an atmosphere in which individuals will be willing to exchange ideas freely and to propose approaches they feel will work, no matter how unorthodox. Including a mix of consumers and providers is especially important because their differing perspectives are more likely to result in the identification of a variety of possible approaches.

As a minimum, a written plan should be developed which includes the elements listed below.

1. If necessary, a more detailed definition of the educational element or message. Often the ultimate decision as to content is a negotiated one based on the best of differing medical opinions. Whatever decision is made, the message should become standard throughout the clinic. Conflicting messages, from whatever source, may so confuse the consumer that they ignore them all.
2. Provisions for examining the current research and experiences of others through the literature, the use of consultants, or contacts with personnel in other similar programs.
3. Detailed descriptions of educational techniques such as individual counseling, mass media, and group discussions. Each approach must be evaluated on the basis of its effectiveness, efficiency, adequacy and appropriateness.[2, 13]
4. Compilation of resources needed and an inventory of resources available from within and from outside the center including training resources, manpower, printed materials, audio-visuals, equipment, space, and actual dollars.
5. An analysis of the major constraints and possible methods to either neutralize or otherwise overcome their effects. Special attention should be given to staff resistance and support although political considerations may warrant deleting this discussion from the written plan.

6. Detailed, approved budget which is adequate to implement activities.

7. Provisions for the preparation of needed materials and the pretesting of both materials and techniques utilizing representatives of the intended audience.

8. Mechanisms for the continuing involvement of consumers in the planning and implementation stage.

9. An assessment of the number and types of manpower required including a description of the team approach which will be used.

10. A time schedule which notes each step which is to be taken, the individual responsible, and the time required including approximate start and finish dates.

11. Provisions for short-term monitoring and long-term evaluation.

Step 8 - Implementation

Based on the program plan, the health education activities are implemented. Successful implementation is more likely to occur if:

1. staff members have a clear understanding of the program;

2. they have received training and are capable of carrying out their individual responsibilities;

3. they are willing to carry out their responsibilities;
4. the materials and equipment which are required are available;
5. the center is organized to implement successfully the new activities; and
6. management skills are adequate to ensure implementation.[2]

Step 9 - Evaluation

An evaluation component is necessary to determine the effectiveness of the program in actually attaining the goals and objectives which have been established. It provides a description of what has been done and provides the basis for selecting alternative strategies in the future as well as a mechanism for demonstrating success, which can in turn provide justification for continued and expanded support.

No matter how limited the evaluation resources (data, skilled staff, or money) some effort should made to provide for program-wide evaluation as well as ongoing monitoring of specific activities. Day-to-day monitoring of the program is most likely to focus on the inputs or the process which is taking place and can begin immediately. Examples include supervision of staff to ensure that each is carrying out his duties, checks on the use of certain materials, and measuring the degree of participation by consumers in certain activities.

Program-wide evaluation, on the other hand, focuses on the outputs of the total program and, in particular, behavior change if that is indeed the goal. It should not be attempted until the total program is operational, thus allowing for greater accuracy and for successful testing of specific elements within the context of the total program. Program evaluation, therefore may not take place before the 2-5 year period required to make programs totally operational. Evaluation has been defined as "the comparison of an object of interest against a standard of acceptability."[8] The fundamental components of evaluation are: "(1) the isolation of an object of interest; (2) comparison, and (3) the selection of a standard by which the comparison will be judged acceptable or unacceptable".[8] As applied to the goals and objectives developed for the health education activities, this definition requires the goal or objective to have an object of interest--the activity or behavior change which is to take place. A standard refers to the amount of change which is to take place and the methodologies used for measurement provide the tools for comparison. The development of the evaluation plan in the context of the total program plan provides a useful check on the feasibility of certain goals and objectives. Some program objectives such as those which deal with adherence to regimen are easily evaluated; others such as those which measure changes in a community are more difficult. Difficulties encountered in identifying the object of interest, method of comparison or standards of acceptability may indicate that goals and objectives are not feasible and should be redefined.

The sections which follow provide examples in which certain elements of the program planning model, in particular, the identification of elements to be considered in the development of the health education programs and the development of specific program strategies, are applied to the four major opportunities for health education outlined previously:

1. Recruitment of the consumer into the center

2. Proper utilization of the center's resources by the consumer

3. Prevention of illness

4. Treatment of illness which does occur by adherence to a medical regimen.

[1] Jeannette Simmons (ed.), "Making Health Education Work," *American Journal of Public Health*, Vol. 65 (October 1975), Supplement.

[2] Deloros H. Kucha, *Guidelines for Implementing An Ambulatory Consumer Health Information System: A Handbook for Health Education* (U.S. Army - Baylor University Graduate Research Series, 1973).

[3] For application of educational principles to this process see Cecilia Conrath Doak, "The Health Educator: Building Credibility as a Change Agent in a Medical Setting," *Dorothy Nyswander International Symposium: Papers on Theoretical Issues in Health Education* (September 27-28, 1974), pp. 1-16.

[4] Caroline S. MacColl and C. Harvey Smith, *Health Education in the Health Maintenance Organization* (Monograph prepared for the Department of Health, Education, and Welfare, 1974), pp.80-83.

[5] Lois A. Maiman and Marshall H. Becker, "The Health Belief Model: Origins and Correlates in Psychological Theory," *Health Education Monographs*, Vol. 2, No. 4 (Winter 1974), pp. 336-353.

[6] Irwin M. Rosenstock, "Historical Origins of the Health Belief Model," *Health Education Monographs*, Vol. 2, No. 4 (Winter 1974), pp. 333-335.

[7] Ronald Andersen and John F. Newman, "Societal and Individual Determinants of Medical Care Utilization in the United States," *The Milbank Memorial Fund Quarterly: Health and Society*, Vol. 51, No. 1 (Winter 1973), pp. 95-124.

[8] Lawrence W. Green, "Toward Cost-Benefit Evaluations of Health Education: Some Concepts, Methods, and Examples," *Health Education Monographs*, Vol. 2, Supp. 1 (1974), pp. 35-37.

[9] J. G. Anderson, "Demographic Factors Affecting Health Services Utilization: A Causal Model, *Medical Care*, Vol. 11, No. 2 (1973), pp. 104-120.

[10] Naomi M. Morris, Martha H. Hatch and Sidney S. Chipman, "Alienation as a Deterrent to Well-Child Supervision," *American Journal of Public Health*, Vol. 56, No. 11 (1966), pp. 1874-1882.

[11] P.M. Densen, S. Shapiro and M. Einhorn, "Concerning High and Low Utilizers of Service in a Medical Care Plan, and the Persistence of Utilization Levels Over a Three Year Period," Milbank Memorial Fund Quarterly, Vol. 37 (1959), pp. 217-250.

[12] Seymour S. Bellin, H. Jack Geiger, and Count D. Gibson, "Impact of Ambulatory Health Care Services on the Demand for Hospital Beds," New England Journal of Medicine, Vol. 280, No. 15 (1969), pp. 808-812.

[13] For additional information concerning the utilization of specific materials and methods see Sigrid Deeds, A Guidebook for Family Planning Education, Section IV (Department of Health, Education, and Welfare, Publication No. (HSA) 74-16002, 1973).

[14] For a comprehensive review of health education methodologies see Lawrence Green and Irene Figa-Talamanca, "Suggested Designs for Evaluation of Patient Education Programs," Health Education Monographs, Vol. 2, No. 1 (Spring 1974), pp. 54-70.

Section II

Recruitment

The success of an ambulatory care center can be measured in part by its ability to deliver reasonably priced, high quality care to a significant portion of the population which has demonstrated a need for such care. Recruitment and retention of patients is crucial to the growth and development of an ambulatory health care system, regardless of its organizational structure or form of support. Whatever the method of payment (pre-paid, fee-for-service, third-party reimbursement, or a combination of these), under-enrollment results in inefficient utilization and ultimately insufficient income to meet overhead and operating expenses.

The relationshop between health education programs and recruitment efforts has been encouraged only recently. In addition, with the growth of federal funding of health programs and the emphasis on prepaid systems in particular, health education staffs have been assigned responsibility to implement public relations and marketing campaigns.

"Public relations is a management function which evaluates public attitudes, identifies the policies and procedures of an...organization with the public interest, and plans and executes a program of action to gain public understanding and acceptance."[1] Its ultimate goal is the realization of a profit. Health education, on the other hand, is concerned with increasing knowledge and developing positive feelings and behavior about health. It is a process by which individuals develop habits which enable them to take a larger degree of responsibility for their own health.

The goal of health education in recruitment efforts should be to blend the techniques of health education and marketing in order to best serve the needs of the consumer. The health education staff should be involved in all aspects of the recruitment efforts which have behavioral and educational aspects. They must be particularly adept at ensuring that:

- the techniques used for enrollment are not coercive;
- the message used for recruitment and the reality of the center situation are consistent throughout (messages should not be contradictory or promise services that are not available); and,
- techniques are developed utilizing the best principles of learning and communication theory and include active consumer participation.

Recruitment efforts face several problems, the most obvious being the potential consumer's lack of knowledge about the availability of services. Equally important is the situation in which consumers know about the center but do not enroll because they do not believe that it provides high quality care. They may have heard negative comments about the physical appearance or the manner in which patients are treated.[2] If this is the case, the health education program should be directed not only at consumers but also at changing the behavior of the providers.

Recruitment problems may also arise when techniques are selected which are inappropriate because they are not sensitive to a variety of potential target populations. This may occur because of differing perceptions of providers and consumers due in part to their diverse educational and socio-economic backgrounds. Meaningful consumer participation, which could aid in better defining the types of approaches effective with particular target groups, is difficult to obtain and sustain. Advertising may also be a problem because of the limitations imposed by the American Medical Association's Code of Ethics and by individual physician reluctance to publicizing their services.[2]

Elements to be Considered in the Development of a Recruitment Strategy

Marketing efforts involve seven factors: contract negotiations, target population, product, price, place, promotion, and enrollment.[3] The following is a discussion of one element of marketing, the recruitment or promotion activity.

The first step in developing a recruitment strategy is to gather suitable data concerning what the potential consumers perceive to be barriers to obtaining services as well as those that are indeed barriers. The more meaningful the analysis of those elements which inhibit or support the desired behavior, enrollment in the center, the more likely it is that successful recruitment strategies will be selected. The following are examples of the types of information which may be useful. They are not intended to provide more than a sampling of the types of data which a health education administrator may wish to obtain. Additional sources of information can be obtained by consulting the Annotated Bibliography (Section VIII) or by pursuing the specific topic within the behavioral science literature.

A. Receptivity

Receptivity to using the center may be measured by obtaining information such as the following from potential consumers:

- benefits and costs of the health services they now use;
- what they like or dislike about those services;
- additional services which they need but which are not now provided;
- what they know already about the center;
- what conditions would cause them to stop using the other health services and start using those of the center; and
- obstacles to using the center.[4]

Other elements which must be taken into consideration include: their perceptions concerning accessibility of services, although few if any studies have shown this to be a direct link to enrollment; attractiveness of the facilities; transportation; costs; and their skepticism concerning the experimental nature of new programs.[2]

B. Adoption of a New Behavior by an Individual

In order for individuals to adopt a new behavior such as enrolling in the center, evidence indicates that they often proceed through a 5-step process which includes (1) initial awareness, (2) interest in receiving additional information, (3) individual evaluation of the positive and negative consequences, (4) trial, and (5) adoption.[5] Thus, information might be gathered to determine which potential consumers are at what stages in their acceptance of the health center, based on their:

- awareness of the existence of the center;
- interest in and need for the center's services;
- individual evaluation of the positive and negative consequences resulting in a decision to try the center;
- utilization of the center's services on a trial basis; and,
- satisfaction or dissatisfaction and consequent acceptance or rejection of the future use of the center.[4]

Such an analysis has particular relevance in the selection of educational techniques to be used. For example, if it is determined that individuals are not yet aware of the center's services then the appropriate educational approaches would be public information techniques such as mass media, mailings, exhibits, and large group meetings. On the other hand, if they are already aware of the center, the recruitment effort should focus on increasing their interest by providing more specific information through the use of small group discussions and one-to one contacts.[6]

C. Community Adoption of a New Behavior

Studies indicate that a new idea or behavior such as enrolling in a health center is first adopted by a group of innovators within a given group. They are followed in order by (1) early adopters, (2) an early part of the majority of the population, (3) a late portion of the majority and finally by (4) laggards or non-adopters.[5] The initial users of the center will be the innovators and early adopters who, because of their readiness, will be quick to respond to public information programs utilizing mass media approaches. Early adopters often have more education and more outside contacts than the group average, have traveled widely, and are more independent of their society; put a high value on efficiency and science; are sources of information for the group because they have adopted a particular practice; and, are viewed as leaders by their group.[4]

These persons are essential to recruitment efforts because they influence the majority and can in turn provide information to the staff concerning what is most acceptable to the majority. Recruitment efforts must necessarily identify community leaders and opinion makers in order to attempt to influence these persons before addressing the more general target population.

D. Other Individuals

The many other individuals who influence a decision to use the health center should be identified, particularly family members. Women are responsible for providing many of the health functions within a family setting; therefore, information on forces which influence a woman's decision concerning health care are particularly relevant.[4]

Consumer behavior is dependent to a great extent on the positive reinforcement which they receive from providers. A good recruitment campaign must also focus on provider behavior which discourages use. Therefore, information should be gathered concerning provider attitudes as well as any impersonal treatment or abrupt and rude behavior directed at patients. Some of this material will be obtained through consumer surveys but much will be detected through feedback from patients or direct observation.

E. Sources of Data

A certain amount of reliable information is usually already available within a community concerning demographic characteristics, morbidity and mortality statistics, health knowledge, attitudes and practices. and consumer expectations and interests. Sources of this information include census data, health department records, city and county planning departments, telephone books (for information on the location of other health resources), universities (for special studies they may have conducted), local and state consumer organizations which may have studied health issues, model cities studies, and statistics collected by other health providers.[7]

If the available data are not adequate, it may be necessary to undertake surveys to determine consumer awareness and interest in the center, negative and positive preceptions, and the readiness of the community to accept a change in the way in which health services are delivered.

Recruitment Strategies

Based on the behavioral elements which are identified, priorities among potential target groups are set, specific goals and individual objectives are established, and the appropriate activities are selected. A mix of activities should be provided which repeat and reinforce the basic message which is being used to attract the consumers.

A. Activities

The following are possible approaches which have been utilized successfully.

1. Inter-Personal Contact

Inter-Personal contact is the most effective method of persuading individuals to accept a new behavior whether it be through contacts with a health provider or member of one's family, peer group, etc. Word-of-mouth communications are particularly effective in promoting adoption of a new behavior.[2,7] Although one-to-one contact is an expensive method it may be necessary if it is difficult to convince persons to use the center or if it is hard to define the target population.[3] The use of indigenous female family health (outreach) workers to provide one-to-one contact has been particularly successful and as effective as those approaches utilizing more highly trained and highly paid health personnel.[8]

2. Distribution of Literature

Local businesses such as grocery stores, supermarkets, doctors' offices, hospital emergency rooms, government buildings such as post offices and local public assistance offices, and unions and civic, religious, social, and recreational organizations all could be used to distribute pamphlets and brochures informing potential consumers of the available services. Since particular target populations should already have been identified, flyers could be enclosed in mailings to specific population groups. All materials must be written in the language and at the educational level of the intended audience. A self-addressed return postcard can be included to allow the individual to ask for more information.

3. Mass Media

Community newspapers and local radio and TV public service programs should be utilized although there may be difficulties if this is considered advertising.[2] Studies indicate that mass media campaigns and general literature distribution are effective if the plan being promoted is new and not generally known within the community.[3] The cost of mass media may be great; therefore, great care should be taken to develop the most effective approach possible. Those involved in planning such activities must remember that mass communications are most effective in bringing about behavioral change when perceived need is high...accessibility is easy, and when the messages are specific and receiver-oriented.[9]

4. Group Contacts

Group contact methods are less costly; require fewer personnel; and are quite effective if they can use the existing dynamics of the peer group.[4] Examples are:

a. presentations concerning the center given to civic, school, and church groups. Community residents who are on the staff of the center, outreach as well as others, should be utilized as much as possible during presentations in their own neighborhoods; and, groups should be small enough to encourage open discussion.[2,4]

b. open houses held in the health care facilities, which include a presentation by a staff member, general discussion period, tour of the facility, and refreshments. If individual action is required, for example returning a postcard before attending, evidence indicates that ultimate enrollment rates are higher.[5]

5. Mass Mailing

This is an activity best done by established centers since they can use current mailing lists to inform individuals about new services available. New centers can also use mailings to make potential enrollees aware of the plan and to promote its use. The advantage of mass mailing is that it can reach almost the entire target population at minimal cost.[3]

B. Manpower

A team approach to recruitment is essential. Ideally, the health education staff should coordinate all the recruitment efforts although this may not be appropriate if there is a separate marketing staff and they wish to retain control. No matter who directs, all staff members should be involved in some way; and, all should know the importance their actions have on consumer satisfaction. The initial contact a consumer has with the appointments secretary, the physical appearance of the center, and the personal treatment given them will all influence whether and how effectively they use the center's services.

Medical staff may be called upon to play specific roles in presentations and demonstrations to community groups. The outreach staff will play a crucial role in recruiting those who are not reached by other approaches because they are outside the flow of middle class message channels or because they need additional positive reinforcement and a motivating influence before they will enroll.

C. Monitoring

Review mechanisms should be established so that all new material and approaches are first pretested on the intended target audience. The day-to-day monitoring of recruitment activities can be accomplished through spot checks on staff work records, counts of the number of pamphlets distributed, discussions at staff meetings, and later by documentation of the number of new enrollees.

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Section III

Utilization

In appropriate use of ambulatory care facilities, including overutilization, underutilization, and broken appointments has an effect on patient satisfaction,[1,2] staff efficiency, on costs, and the quality of personal health care. Although social and cultural factors influence a person's health behavior and patterns of utilization of health services, these patterns are also influenced by the availability of ambulatory facilities, the provision of comprehensive services and increased knowledge of services and payment mechanisms. Education concerning methods of utilization, recognition of the need for and sources of proper care, and the use of appropriate health facility personnel may change existing patterns to more efficient ones.

Identification of Major Elements of the Problem

A. Overutilization

Overutilization is evidenced by unnecessary use of emergency or other services for symptoms which could be managed at home; initial or return visits for complications which could have been prevented; or, visits for symptoms which are trivial or do not require medical attention.[6] Some patients are consistently identified as high utilizers. For example, each year 4% of the members of the Health Insurance Plan of Greater New York (HIP), a large prepaid group practice, account for 25% of the total volume of physician services and 12% account for 50% of all services.[7] Naturally, the standard for defining overutilization is a subjective one and varies depending upon the problem and the medical treatment required.

1. Unnecessary Use of Services

If patients are not knowledgeable about their health and do not know the appropriate response to particular circumstances or symptoms, they are not able to make use of health services with maximum efficiency. Some patients view a clinic visit as the appropriate response to symptoms for which no action is required or for which a phone call would be sufficient. For example, evidence from one study indicated that when mothers were not certain of the correct responses to particular symptom situations they were more likely to overutilize rather than underutilize health resources.[8]

2. Walk-In Visits

Walk-in visits (patients arriving at the clinic to receive services without an appointment) may or may not be considered an indication of inappropriate use of services. Depending upon the appointment system and the available manpower, a walk-in visit may result in longer waiting times for that individual or others. The longer waiting times may then lead to patient dissatisfaction and ultimately to broken appointments and non-adherence to medical regimen.

The major variable which distinguishes the walk-in population from appointment-makers is the distance between the health center and their place of residence. Although living closer to the facility increases patient visits, it is not necessarily true that this results in better utilization and, in fact, evidence shows that a greater proportion of those making unscheduled visits are poor utilizers.[9]

B. Underutilization

Underutilization of health services, including delay or failure to respond early to symptoms,[10] broken appointments, or failure to take preventive health measures, can result in serious illness or death and increased cost of care. Extended delay may utlimately result in hospitalization which, if the condition had been identified and treated earlier, might have been unnecessary. Reasons for underutilization may be financial problems, social alienation,[11] inconvenience in obtaining care (transportation or clinic hours), dissatisfaction with the services, reluctance to accept a new type of delivery system, fear of consequences of the illness or its treatment, inadequate knowledge of symptoms requiring medical attention, or lack of orientation of providers and consumers toward preventive care.

1. Crisis Orientation Toward Health Care

Although the leading causes of death in the United States, including coronary artery disease, emphysema, diabetes, cerebral vascular disease, and others, are conditions which develop progressively, often intervention occurs only at the time of a crisis such as a heart attack, rather than earlier when prevention services, such as exercise or smoking cessation classes, could minimize the likelihood that the condition will occur. While the consumer ultimately determines whether or not to seek health care or return for a follow-up appointment, providers, through their attitudes and recommendations for care, influence consumer attitudes toward health and illness utilization patterns.[12,13] Even if new systems offering comprehensive care and emphasizing health maintenance are available, traditional utilization patterns will continue to exist if consumers and providers are not reoriented to the new systems. Resentment and frustration may increase if patients do not know where to go for information or to lodge complaints or if no grievance procedure is offered.

2. Broken Appointments

Patients who do not keep appointments account for one-fourth or more of clinic appointments. Appointment-breaking results in a lack of continuity of care, inefficient use of health manpower, and increased costs to the center which in turn mean increased costs to the consumers.[14,2] The problem of appointment breaking may be viewed as a cycle in which patient dissatisfaction leads to broken appointments which clinics attempt to compensate for by overscheduling. The result is increased patient waiting time, a major element of patient dissatisfaction,[15] which causes more broken appointments.[6,16] Lack of continuity of care and lack of personalized care are other causes of patient dissatisfaction and are strongly associated with appointment breaking.[2,9,17,22]

Identification of Specific Factors Influencing Utilization Behavior

Many sociodemographic factors have been examined in order to understand utilization behavior, particularly broken appointments, including socioeconomic status,[2,3,19,20,18] feelings of alienation or powerlessness,[11] age,[7,21] sex,[4] race,[2,18,20,21] distance,[22] costs,[3] family stability,[2,19] and mother's education level.[8,19] Not only are conclusions conflicting but most of these elements are not within the power of the health center to change.

Illness level or urgency is a major determinant of utilization.[23,24] Patient ability to distinguish between symptoms which require medical attention and those which do not will determine whether the health system is used appropriately. Accessibility of preventive and health maintenance services is another important element of utilization,[5,25,26] one aspect of which is whether consumers are informed about available services and how to use them most effectively. Other elements of accessibility affecting patient behavior are family responsibilities, transportation,[13] clinic hours, geographic location,[9,22] and waiting time.[1,6,15,18,26]

Clinic operations, to a large extent, account for behavior patterns of patients. Lack of continuity of care[27] and depersonalization of services[2,15] are major problems from a patient's view point, and when these situations are improved, positive results include increased visits for health supervision, improved compliance, and decreased broken appointments.[9]

Program Strategies

The following discussion outlines several strategies which may promote more desirable utilization behavior.

A. Unnecessary Use of Services

1. Self Care Programs

Because many conditions and treatments for which people have traditionally relied on medical personnel could be taken care of by the patient and family, educational programs in self-care can reduce the need to rely on the medical system and help the patient lead a more normal life.[6] In one instance, a program which included formal instruction on treatment, training in venipuncture, and giving a supply of blood to 45 hemophilia patients and their families reduced absenteeism from work by 74%, hospitalization days by 89%, outpatient visits by 76%, and health care costs by 45%. The study showed that highly trained personnel were not needed to perform the routine procedures involved in treating such patients.[28]

For those conditions which do require medical treatment, the amount and type of treatment needed may be altered through the use of educational techniques:[19]

- One study demonstrated that emergency room utilization by asthmatic patients was significantly reduced following group sessions in which patients discussed the causes of their attacks and the use of prophylactic drugs.[29]
- An educational program for patients with congestive heart failure increased patients' knowledge of their disease, medication, diet, and their adherence to medical regimen, and decreased the number of days patients spent in the hospital from 600 before the project to 148 for a similar period following the program.[30]
- Following instructions and concerning the severity of post-operative pain, including reasons for the pain and use of relaxation techniques to relieve pain, patients used significantly fewer drugs and were released from the hospital 2.7 days earlier than the control group.[31]

To reduce both over utilization and underutilization of medical services, it is necessary to teach individuals to respond appropriately to common symptoms and circumstances including recognition and treatment of minor symptoms.[8,32] Outside sources can be used for problems of overutilization by the worried well. A referral system to appropriate social service agencies could aid individuals with problems which do not require medical intervention.

2. Telephone Services

One means of reducing patient visits or emergency room admissions is to develop a telephone service for medical advice.[33] The introduction of a telephone answering service, used in conjunction with a screening policy for hospital admissions for diabetic patients, reduced the annual admission rate by one-half, reduced emergency room visits significantly, reduced preventable admissions such as those prompted by diabetic coma by two-thirds, and resulted in estimated cost savings of from $1.7 to $3.4 million annually.[25]

B. Walk-In Visits

Special education efforts should be targeted at those living near the facility. Because the greatest number of walk-in visits are likely to be made by those living very close to the center (32% of the walk-ins in one study lived within a single block),[9] a block party sponsored by the center to attract this population could be used as an opportunity to stress appropriate utilization. The importance of scheduling appointments could be emphasized as well as the need for preventive care. If repeated walk-in visitors are identified, these messages could be reinforced on an individual basis. One way of encouraging use of appointments is to offer to escort patients or to provide babysitting services if appointments are made in advance.

C. Avoiding Crisis Orientation to Health Care

1. New Enrollee Education

New enrollees to a health center need to learn what services are available to them and how to utilize them most efficiently. This may be accomplished through open houses, orientation programs, booklets, and individualized orientation in which an intake person informs the new patient about the center and at the same time tries to identify the patient's special needs.[34] Written materials should be developed which reinforce verbal messages and serve as a reference at later times. Information should be presented in an attractive and readable form and be available in the common languages of the patients. Content of the introduction to the center might include:

- explanation of the type of organization
- telephone directory
- clinic hours
- what to do in case care is needed after clinic hours
- map which locates the center in relation to surrounding area
- procedure for making appointments
- step-by-step procedure after arrival for appointment
- importance of being on time, keeping appointments or cancelling if they cannot be kept
- what to do in an emergency
- description of which common symptoms and situations require medical attention and when
- what to do if patient becomes ill when not in the area
- description of all services available
- explanation of coverage
- description of all levels of personnel, especially new types of personnel patients may not be familiar with such as physician assistants, health aides, midwives, nurse practitioners
- how to select and change doctors
- grievance mechanism
- how to become involved in policy development for the center
- health record to keep track of important health information[35]

Members should be apprised of any changes in the system, the addition of staff persons or new services, etc., through newsletters, leaflets, or posters in the center.

2. Accessibility of Care

The center should attempt to remove structural barriers which reduce accessibility of care. When patients break appointments or delay in seeking care, center personnel should ask about the patient's particular problems, if any, with clinic availability (so that the patient's needs can be met. If it is a matter of difficulty getting to the center, the center could provide a pick-up service, make home visits when necessary, or provide patients with bus tokens for their visit. When the family is large, the center may offer to have an outreach worker stay with the children while the mother or father visits the center or takes another child for an appointment. The facility can organize a playroom where other children will be supervised during the patient's or sibling's appointment. Family-centered care could concentrate on seeing all family members in a single visit and hours should be arranged so that working persons can bring their children and attend themselves during non-working, non-school hours.

3. Grievance Mechanisms

A grievance mechanism through which patients can make complaints and receive information should be established and be given great visibility. A review of patient complaints should be made and discussed at staff meetings and attempts should be made to eliminate causes of complaints. Responsiveness to complaints is important in reinforcing patient influence on center policies and services. The procedure should be a constructive mechanism for providers which does not threaten them and provides information to help staff understand reasons for patient dissatisfactions so that appropriate changes can be made.

Providers should also be able to use the grievance procedure to solve problems they have with patients. For example, if a physician has a patient who is an overutilizer, the problem could be brought to the attention of the grievance department. They could take special measures to educate that patient about appropriate utilization, arrange for the patient's enrollment in a self-care class, or refer him to a social service agency.

4. Orientation of Consumers to Prevention and Health Maintenance

Efforts should be directed toward increased consumer orientation to preventive medicine and health maintenance. This should be reflected in the establishment of preventive programs and classes, such as weight control, prenatal and child care, smoking cessation, and others at the center or other convenient places in the area. It is important that providers inform patients of these programs and urge their participation in them.

D. Broken Appointments

Reduction of broken appointments may be encouraged by:

- ensuring that patients understand the importance of keeping appointments or calling to cancel[21]
- adequate communication of medical urgency by provider to consumer
- use of appointment reminders such as appointment cards, phone calls, or postcards.[6,21] At least one study found reminder post cards to be more effective than phone calls in reducing the broken appointment rate.[14]
- increased personalization of care including provisions for continuity.[2,9,17] Appointment assignments should be made with one particular physician. Provisions should be made to allow patients a means of selecting their own physician or health team and assistance should be offered to aid in the selection.
- reduction of waiting time through use of an organized system of scheduled appointments. Promptness of both providers and consumers should be emphasized.[18]
- use of waiting times as opportunities to present brief educational programs.[36]
- explaining to patients the reasons for the waiting time.[33]

E. Manpower

1. Training

Training sessions should be conducted for all center staff to sensitize them to patient needs and problems affecting utilization such as the desirability of a personalized atmosphere within the center, improved provider-patient communications, and increased sensitivity to cultural practices. Emphasis should be placed on promoting physician acceptance of the active participation of other personnel in health education and patient care as well as on the patient's own responsibility for self-care.

All staff members should be made aware of the roles they play in influencing patient utilization of the health center. They are all elements of an environment to which the patient reacts, and a pleasant or unpleasant experience whether it is at the receptionist desk or with the physician, influences how the patient behaves with regard to the entire system.

2. Expansion of Roles

As care changes from an illness to a health maintenance pattern, the roles of certain personnel take on greater importance.[13] For example, in most instances, it is less costly and equally acceptable for the well-baby to be attended by a nurse rather than a physician and for the "worried well" to meet together in groups with a member of the support staff.[34,36] As staff roles are expanded and as new types of personnel such as nurse practitioners, midwives, physician assistants, and others become involved in delivering health care, consumers must also learn the qualifications of these new types of personnel and when it is appropriate to seek their services.

F. Evaluation

The following are examples of information which can be utilized to document the existence of inappropriate utilization and to evalute the effectiveness of an educational activity.

1. Record Reviews

Certain aspects of the patients' use of the health center should be recorded on their record every visit so that the information is available for review in order to identify utilization patterns which create problems for the center or the patients. Information recorded might include:

- number of visits;
- purpose of the visit;
- how far in the future the appointment was scheduled;
- broken or cancelled appointments;
- whether the visit was a walk-in visit or was made by appointment;
- lateness for scheduled appointment;
- waiting time to see the physician or other provider;
- which physician or other personnel the patient had contact with;
- phone calls made by the patient to the provider or by the provider to the patient and their purpose, to order a prescription, appointment reminder, etc; and,
- whether the patient brought the proper identification cards required by the center for record or payment purposes.

Once a broken appointment rate is documented, an educational program emphasizing the importance of keeping appointments or calling to cancel could be conducted within an identified population. Kept and broken appointment could be noted on their records for a period such as a year. Several approaches to lowering broken appointment could be tried at once with different groups and the results compared to determine the relative effectiveness of each method.

2. **Appointment Sheets**

A review of daily appointment sheets is a quick way to obtain information on aspects of utilization such as whether appointments are kept and whether the patient arrived on time.

3. **Patient Complaints**

Those staff members responsible for handling patient complaints should analyze complaints received. It is likely that dissatisfactions expressed by patients will reveal why and how patients are utilizing services and will therefore be helpful in identifying problems from the patient's perspective.

4. **Patient Surveys**

A center should not rely solely on patient complaints to identify problems because many patients may react by not returning or by breaking appointments rather than by openly expressing their dissatisfaction. A survey or questionnaire can be used to obtain patients' views, their satisfactions or dissatisfactions, or difficulties they have with clinic operations. The survey might ask questions concerning accessibility of the center based on transportation problems or clinic hours; services not offered that they would like to have; how well they understand their coverage; and if they have felt they had to wait too long to get an appointment or to see a physician.

5. **Staff Reports**

Staff observations of patients' utilization behaviors are useful in identifying problems. Receptionists and clerks are in particularly good positions for documenting these problems. They must deal, for example, with the patients who forget their identification cards, and they are most likely to realize when patients have had to wait long to see the physician or when the patient or physician has arrived late for appointments.

6. Marketing Data

Information collected for marketing purposes such as patients' likes and dislikes about services they were using at the time of the marketing survey and obstacles to using the center can also be used as baseline data for evaluation purposes.

7. Cost-Benefit Analysis

A significant criterion of a program's desirability is its cost-effectiveness and, in particular, its ability to reduce costs while maintaining or even improving patient health status. Costs should first be determined for the existing patterns of utilization. After the educational program is completed and comparable utilization data is collected, total costs should again be calculated and then compared. For example, evaluation after a formal instruction program for hemophiliac patients and their families in management of bleeding problems took into consideration days lost from work, which decreased 74%; days of hospitalization, which decreased 89%; and number of outpatient visits, which were reduced 76%. Another benefit not quantifiable was the normalization of patient life styles.[28]

The cost of conducting the program should always be deducted from the estimated savings. A program aimed at reducing asthmatics' utilization of an emergency room showed that use was reduced significantly. Furthermore, when the program costs were analyzed it was found that one discussion group of five or more patients made 10 less visits than would otherwise have been expected. Based on a $20 cost of each visit, the total savings of $200 compared favorably to the $40 cost of the discussion group.[29]

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Section IV

Prevention

Drastic reductions in illness, disability and early death could be achieved through widespread adaption of preventive health measures. There are many points in each individual's life when preventive measures could aid in the maintenance of good health or interrupt the disease process. Early diagnosis and treatment of many diseases and the reduction of risk factors by changing certain health habits or general lifestyle are the greatest hopes for controlling the primary causes of morbidity and mortality.[1,2,3,4] In addition, preventive programs have the potential of reducing health care costs significantly since cost-benefit data gathered from a variety of health programs demonstrate that preventive programs have high potential and actual payoffs.[5]

Prevention Programs

Primary prevention programs are designed to stop illness before it occurs by eliminating its causes rather than by treating its effects. Activities such as anti-smoking campaigns, family planning, automobile and water safety programs and those emphasizing patient responsibility and self-care such as exercising and proper diet are primary prevention programs. Secondary prevention programs emphasize the early identification and diagnosis of individuals who already are suffering from some form of illness and include multiphasic and mass screening for specific diseases and individual, periodic, medical and dental examinations.

An ambulatory health center must be involved in both primary and secondary prevention programs; and, both depend to some extent on the use of effective health education techniques. Health education strategies are especially important in programs dealing with infectious diseases, chronic illness, and certain risk factors.

Identification of Major Opportunities for Health Education

Infectious Diseases

The values of the traditional preventive programs are evidenced by the virtual elimination of smallpox, polio and other infectious diseases through immunization programs. Widespread use of the vaccine reduced the average annual number of polio cases from 38,727 in the five years preceding introduction of an effective vaccine (1950-55), to 51 cases in 1967. As a result, medical costs attributable to the treatment of polio amounted to only $50,000 in 1967 instead of an estimated outlay of $40,000,000 had the incidence not been reduced.[6] Health education methods were used extensively in recruitment efforts for the polio program as well as for other infectious disease control programs.

Chronic Illness

While preventive measures have decreased the hazards of infectious diseases considerably, chronic diseases and other conditions which preclude the enjoyment of a healthy and active life are still prevalent. Nearly 3,000 of the 3,500 cases of glaucoma which occur annually could be prevented if all persons over 40 were tested periodically and received treatment when required.[6] Of the approximately 345,000 deaths attributed to cancer in 1972, it is estimated that 108,000 or one-third of these deaths could have been prevented through earlier diagnosis. In 1969 it was estimated that 9,000 of the 14,000 deaths due to cervical cancer could have been prevented if all women over the age of 20 had annual pap smears and appropriate treatment when necessary. For every dollar spent for cervical cancer screening programs an estimated nine dollars is saved due to reduced medical expenditures, increased patient productivity, and lives saved resulting from early diagnosis.[5]

Risk Factors

Some conditions or habits, while not directly causing deaths or disability, are risk factors which increase the likelihood that illness will occur. The National High Blood Pressure Education Program estimates that high blood pressure is the primary cause of 60,000 deaths and a contributing factor in

1,500,000 heart attacks and strokes annually. While the condition generally cannot be prevented, most moderate and severe hypertension can be controlled with drug therapy. Early detection and treatment could save 200,000 lives annually.

Obesity is a major factor in heart disease and diabetes. Cigarette smoking is recognized as the single most important agent of disease based on its effects on morbidity and mortality. It is linked to lung cancer, emphysema, heart disease, chronic bronchitis, arteriosclerosis, increased susceptibility to colds, flus and other illnesses. Alcohol is the second most important known disease agent. It is a factor in cirrhosis of the liver, cancer, heart disease, ulcers, diabetes, increased susceptibility to infections and anemia, and can cause serious brain damage.[4] The health problems associated with these risks continue to grow even though obesity, cigarette smoking, and the excessive use of alcohol are all within an individual's control.

Health Education Programming and Prevention

Individuals often fail to realize the power they have to maintain their own health and fail to recognize the relation between their lifestyle and their health. Unfortunately, when information relevant to health status is known, such as the proven link between lung cancer and cigarette smoking, individuals frequently do not respond in the manner which would improve their health. Effective preventive health education programs must overcome several additional and important problems including:

- an inability to obtain support for preventive health programs rather than those which are crisis-oriented and targeted at persons who are already ill;
- lack of coordination of activities among organizations, especially those of the voluntary associations, e.g., heart, lung;
- inadequate knowledge concerning long-term behavior change and techniques by which it can be accomplished; and,
- the difficulty of evaluating programs whose goal is behavior change.

Health education programs which are based on the concepts of primary prevention and the reduction of risk factors can play an important role in minimizing the frequency of health problems. Studies indicate that increased knowledge can improve the frequency with which individuals seek preventive care. By educating the public to seek screening tests and to recognize early signs of illness, disease conditions can be diagnosed and treated early, reducing the severity of illness, the costs of health care, and increasing the number of lives saved.[3]

Development of a Program Strategy

The difficulties involved in convincing individuals to practice preventive health practices often occur because the modification of their behavior requires a basic and substantial change in their daily habits. Health education methodologies, however, can be utilized to aid and support individuals who wish to modify their behavior to improve their health and prevent illness.

A. Identification of Health Problems

The first step in the development of a successful prevention health education strategy is the identification of the health problems to be prevented and those elements of behavior which promote or hinder the actions desired. There are probably no health problems which cannot be avoided or their effects mitigated by proper preventive measures. Preventive programs in ambulatory care centers, however, are most likely to center around the following:

neo-natal and well-child care

mother care

nutrition

diseases of the heart and blood vessels

cancer

chronic pulmonary problems

adolescent health

Although these are problems which are generally the object of prevention programs, each center's program will, of course, address problems which are prevalent among its particular target population. The following are types of data which will aid in identifying the health problems of particular concern to the center and thus provide the direction for development of future preventive programs.

1. Information on age, sex, ethnicity, educational levels, reading levels, and language. Sources of data include census data, registration or enrollment information, and those collected through special survey activities.

2. Information concerning major health problems which affect specific age groups.

3. Information to determine existing levels of preventive behavior such as immunization levels, number who have had pap smears, and risk data for each group for particular diseases.

This information is available from both public and private organizations such as local health departments or local offices of various federal agencies, other health facilities, national health organizations, schools of public health in colleges and universities, and medical schools.

Characteristics such as personality and socio-economic status often determine whether an individual will seek preventive care.[3,8,9] Health beliefs, attitudes, and knowledge are major factors in the causation and prevention of chronic diseases.[2,3,10] Individuals most likely to take preventive actions are those who believe:

they are susceptible to a disease;

that the disease may have serious effects; and,

there are measures they could take to prevent or overcome the effects of the disease which are accessible and effective.[3]

Preventive health programs are rarely developed on the basis of these elements of human behavior. As a result, little if any evaluation or pretesting of techniques is performed to assess their effectiveness in influencing the beliefs listed above.

The following is an example of the type of information which could be gathered and analyzed to determine those forces which result in preventive behavior such as a monthly self-examination for early detection of breast cancer and the type of educational activities most likely to result in increased use of breast self-examination.

1. The knowledge which the woman and her family or others have concerning the mechanics of performing the examination and its importance.
2. The positive and negative influences of the attitudes and beliefs held by those around her, individual friends, peer group, spouse, and other family members.
3. Her perception of the rewards to be gained from performing the examination such as freedom from anxiety concerning cancer.
4. Her attitude concerning negative effects such as the fear of learning one may have cancer.
5. Previous experience with the health care system and the effectiveness of preventive health practices in particular.[11]

Each preventive health practice will have its own particular elements, many of which are described in the growing behavioral science literature, which should be consulted before specific programs are initiated.

B. Strategies

Any prevention strategy must be based on the underlying principle that human behavior is extremely complex and any change in behavior must involve a multitude of factors. There are two basic goals in any such strategy:

creating a reason for avoiding danger and providing a structure by which individuals can take action to avoid the danger. Studies indicate that each of these in turn involves a two step process.

In order to create a reason for avoiding danger a "clear image of the threat" must be presented with "words and pictures" which provide a "visually compelling case for the causal link between various actions and the danger." The second step is "to make the threat personal by making frequent direct references to the recipient...and by selecting examples of danger from the person's own life situation."[2]

Even if an individual understands the reason for avoiding danger, he must have a way to take the appropriate action. Therefore, the second step must include:

(1) "specification of the protective response and a clear statement of its value"

(2) "an exact specification of when, where and how to take action."[2]

Each preventive health education program must, therefore, include both a method for informing the individual of the risks and a method by which he can take effective action to avoid the risk.

C. Coordination of Existing Resources

The development of program strategies should begin with an assessment of resources available for prevention programs from outside of the center. Existing health-related organizations working in particular problem areas such as diabetes, heart disease, etc. should be contacted in order to coordinate existing activities and eliminate duplication of effort, to identify possible existing materials to assist in instruction or as part of a mass media campaign, and to identify possible sources of technical assistance.

Some local communities have initiated formal coordinating mechanisms to develop area-wide plans not only for health education but also for general planning for all health problems. In at least one community this cooperation has resulted in the design of a program planning model for health education which includes a framework for planning and a definition of goals, priorities, needs, and specific program strategies. The number of groups involved in the planning process in that community indicates the types of resources for preventive programs which are available in any community: county health department, mental health department, cancer society, tuberculosis and respiratory disease association, local colleges, federal agricultural extension service, local medical society, local welfare department, and various other civic organizations and schools.[12]

D. Consumer Involvement

Consumer involvement in preventive programs is particularly important because of the difficulty inherent in determining what are the important underlying elements of an individual's or a group's lifestyles. Although sustained and meaningful consumer participation is difficult to achieve, one initial important step is the establishment of an advisory committee which includes a mix of consumers, health professionals, and other community persons. This group could be particularly helpful in indicating differences in perceptions between consumers and providers. Consumers are also effective as instructors or as guest lecturers for classes.

E. Team Approach

All health professionals involved in care, including administrators, must be made aware of the influence they have on preventive health habits and the variables affecting consumer behavior patterns. Outreach workers, health aides, and family workers are particularly effective since they are able to deliver a more personalized message by bridging cultural gaps between provider and consumer and by acting as facilitators between the health facility and the community.

F. Use of Fear

Increasing amounts of data are available concerning the use of fear as well as those factors which influence delay in treatment. These materials should be studied carefully before any preventive health education programs are initiated. Program planners should take into account evidence which indicates that:

1. Explicit descriptions of the danger do bring about strong beliefs in the "seriousness of the danger, more favorable responses toward the protective action, and stronger intervention to act." However, the material must be accurate..."irrelevant threats, biased data"[2]may undermine the strength of the message;

2. the threatening message is effective only when it is backed up with a structure for taking immediate action; and,

3. the use of fear may be counterproductive, especially if the message "emphasizes the vulnerability of the individual subject or if the subject is low in self-esteem." They may perceive the situation as being so hopeless that nothing can be done.[2]

G. Use of Media

Because of their potentially low cost/benefit ratio the use of mass media approaches for prevention require particularly careful analysis. Evidence indicates that:

1. mass media approaches are effective in influencing opinions on issues that are "low in importance and irrelevant to group norms and values;"

2. it has more impact on those "who feel isolated from the rest of society;"

3. it "may influence people who are ready to change their beliefs and practices for other reasons;"

4. it reinforce(s) existing opinions; and,

5. it "may have long-term effects by establishing behavioral norms."[2]

H. Interpersonal Influences

A major factor in influencing changes in beliefs and behavior is interpersonal influence; therefore, activities should maximize opportunities for personal contact. In addition, group-peer contacts are considered critical in the acceptance or rejection of "Lifestyle" issues/problems. Interpersonal communication is highly effective because:

1. "direct confrontation" with the one delivering the message "provides rewards for agreement;"

2. his presence is more likely to ensure attention to the message;

3. he can assure comprehension because he is receiving immediate feedback as to whether the listener has received the correct information; and,

4. he can identify counter arguments and immediately provide information to disprove them.[2]

I. Long-Term Strategies

Major preventive health education programs which could affect our overall health require the utilization of many resources which are not within the scope of the center's capabilities. Although the center may not be actively involved in such activities, it certainly would wish to promote community action for good health. For example, it could try to reduce smoking among its own clients utilizing a variety of small group and individual cessation techniques. It might, however, also lend its support to more far-reaching activities to reduce smoking such as the following:

1. prohibition of cigarette advertising;

2. massive national health education campaign concerning the dangers of smoking utilizing mass media and individual counseling;

3. raising the cost of cigarettes through increased taxes; and,

4. agricultural subsidies to tobacco farmers who agree to grow other crops.[4]

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[2] Howard Leventhal, "Changing Attitudes and Habits to Reduce Risk Factors in Chronic Disease," *American Journal of Cardiology*, Vol. 31 (May 1973), pp. 571-580.

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[4] Milton Terris, "Statement on Prevention," Presented to the Task Force on Prevention, American Public Health Association Annual Meeting, New Orleans, Louisiana, October 22, 1974.

[5] H. Lynch, J. Lynch, and C. Kraft, "A New Approach to Cancer Screening and Education," *Geriatrics*, Vol. 28 (May 1973), pp. 152-157, citing M. G. *Neuberger*.

[6] Jose Bales Graber, "Preventing Dependency: Protective Health Services," *American Journal of Public Health*, Vol. 59, No. 8 (August 1969), pp. 1413-1427.

[7] Harry T. Phillips, "State of the Art of Preventing Disease," Proposal submitted for consideration by the American Public Health Association as a prevention activity, March 15, 1974, p.3.

[8] Allan F. Williams and Henry Wechsler, "Interrelationships of Preventive Actions in Health and Other Areas," *Health Service Reports*, Vol. 87, No. 10 (December 1972), pp. 969-976.

[9] Don P. Haefner *et al.*, "Preventive Actions in Dental Disease, Tuberculosis, and Cancer," *Public Health Reports*, Vol. 82, No. 5 (May 1967), pp. 451-459.

[10] Lawrence Green, "Cost Containment and the Economics of Health Education in Medical Care," Paper presented before the American Health Congress, Chicago, Illinois, August 14, 1974.

[11] Caroline S. MacColl and C. Harvey Smith, *Health Education in the Health Maintenance Organization* (Monograph prepared for the Department of Health, Education and Welfare, 1974).

[12] Shelton P. Gans, and Gerald T. Horton, "Integration of Human Services: The State and Municipal Levels," New York: Praeger, 1975.

Section V

Adherence To Regimen

Studies indicate that from 15% to 93% of all patients do not follow physicians' recommendations. The majority of studies show that at least one third do not comply.[1] Non-adherence to prescribed treatment regimens has far-reaching effects on the health care system: the patient cannot benefit from treatment he does not follow; health care providers are frustrated in their efforts; and, the cost to the entire system is increased if the patient presents himself again with the same or a more serious condition resulting from noncompliance with the original treatment regimen.

Identification of Major Elements of the Problem

A. Lack of Recognition of the Problem of Non-Adherence

Health care providers frequently do not recognize the seriousness of the problem of non-compliance to medical regimen.[2] Despite the fact that studies consistently show that patients with a variety of illnesses do not follow prescribed regimen, providers neither recognize the problem nor do they take the actions necessary to reduce non-compliance. The first reaction to a patient whose condition is not improving is often to prescribe a different medication assuming that the drug is at fault without asking the patient if he actually has been taking the medication.[3] The number and quality of precautions taken to increase the likelihood that a patient will follow the regimen is reduced if the problem of non-adherence is not anticipated or recognized.

Additionally, the medical problem and proposed medical solutions often are not examined in the context of the rest of the patient's life. The patient's environment, peers, daily routine, financial situation, family, personality, and prior experience with illness and medication are not taken into consideration.[4,5] However, many of these factors may make adherence to the physician's preferred regimen difficult if not impossible. Prescriptions may never be filled because their cost is prohibitive. A regimen may require the assistance of another person, but the patient may live alone. Although the physician decides the amount and type of drug to be taken, medication is generally self-administered and the patient is autonomous in deciding how and if the drug actually is taken.[6] The physician who does not recognize the value of shared decision-making loses an opportunity to arrange a workable regimen in which the patient will be willing and able to cooperate.

Approaching the medical problem from a purely physiological viewpoint while ignoring the social and psychological factors is unrealistic and naive, and results in the erroneous assumption that a patient will follow a regimen simply because the provider advises it.[7] If the provider does not learn the attitudes and intentions of the patient concerning the regimen at the very beginning, including identification of patients who never intend to follow the regimen,[8] they are wasting time and the patient's money.

B. Physician-Patient Relationship

A poor physician - patient relationship resulting in faulty communication between the physician and patient increases the likelihood of noncompliance.[1,4,9,10,11,12,13,14] If the patient does not understand or remember the physicians instructions, he will not complete the treatment regimen.[15,16,17] Although the physician-patient relationship is most prominently addressed in the literature, patient's interactions with the nurse and all other health care staff also affect the patient's willingness to heed advice or to cooperate with them in his treatment. Studies such as one in which 54.5% of the hypertensive patients fully accepted the health aide as a source of care as compared to 61% who fully accepted the physician,[9] indicate communication is important in all provider-patient relationships.

Part of the problem arises from the change in the nature of the physician-patient relationship. A long-term relationship with a family doctor is disappearing and has been replaced with impersonal, short-term associations with specialists.[18] Often a patient will see a different physician on each visit to the health care center, thus hampering the development of a warm, trusting and personal relationship. Lack of continuity of care is frequently identified as a factor leading to noncompliance.[9,19,20]

Many physicians do not attach great importance to personal rapport with the patient. Medical schools emphasize scientific and technical knowledge and skills, while neglecting interpersonal relationships and communications, leaving these to the student's intuition.[18] A physician's technical knowledge will be of little consequence, however, if he cannot enlist the cooperation of the patient, especially in an ambulatory care center.

If the physician is perceived as rejecting or unconcerned about the patient's needs, his instructions may not be followed.[10,15,21,22] A study of 800 out-patient visits to a pediatric clinic showed that the extent to which the mother's expectations of the visit were unmet, the lack of warmth in the relationship, and the failure to receive a clear statement of what was wrong with the baby were key factors in noncompliance with the medical regimen. While most physicians thought they had been friendly, less than half the patients perceived them as such. The greatest complaint was that the physician was too disinterested in the mother's great concern for the child.[10,18] In another example, over fifty percent of the mothers, who were highly satisfied with the doctor's behavior during the visit cooperated completely with medical advice, compared to only 16.7% of the highly dissatisfied mothers.[9,18]

Particular types of physician-patient interaction have been identified to determine patterns which are characteristic of patient noncompliance. Noncompliance increased when, in a revisit, there was an authoritative patient and a physician who was passive about the patient's participation, when there was unreleased tension between the patient and the physician, and when the physician requested much information but provided no feedback to the patient.[1]

C. Inadequate Understanding of Illness or Treatment

Inadequate understanding of illness or its treatment is a major barrier to the patient's adhering to a medical regimen. If a patient does not believe in the importance of following the regimen because he does not see a logical relationship between the treatment regimen and the illness or does not believe in the effectiveness of the treatment, he is not as likely to adhere to the instructions as one who does. Hypertension is a good example because of the particular difficulties involved in treating a symptomless disease. Frequently, the physician must tell the patient who feels well that he should take a medication with unpleasant side effects for the rest of his life. If the patient is not convinced, at least of the relationship of the treatment to his blood pressure and the necessity of taking the medication to prevent more serious illness, one cannot assume that the patient will subject himself to the side effects. Adherence is further discouraged when the side effects are alarming or unexpected.[3]

If the individual's illness has been diagnosed, his feelings of susceptibility can be modified by increasing his belief in the accuracy of the diagnosis, resusceptibility, or vulnerability to other illnesses. If the patient believes he is susceptible, he must also believe the illness would cause serious results. Patient estimates of seriousness have consistently been predictive of adherence.[8,10,11,20]

Compliance is further determined by whether or not the patient believes in the effectiveness of the treatment. A balancing of factors may be involved as the patient considers whether the difficulties entailed in complying, such as the side effects or changes in daily routine, are outweighed by their subjective estimate of the consequences of not complying. Many factors are influential in determining the patient's subjective estimation. One, a belief in the effectiveness, is a direct result of the patient's confidence in the physician and in the medication. If the physician does not convey his feelings about the importance of the treatment and confidence in its effectiveness the patient is less likely to comply. Reinforcement and encouragement are especially important to prevent backsliding when a medication's positive effects are not visible or have a delayed effect.[23] A study of compliance among patients with rheumatoid arthritis showed that thirty-seven percent who felt its crippling effects were inevitable and treatment would not be successful were full compliers as compared to sixty-one percent who had greater faith in the treatment.[24] Unless the physician or other provider can instill confidence in the treatment in the patient, compliance is likely to be low.

Patients frequently ignore or make errors when implementing recommendations because the purpose of the medication or particular regimen or the results which should be expected are not fully explained or understood.[25] In one study fourteen percent of the patients stated they did not comply because of "doubt about the value of the recommended procedure." It is suggested that patients ignore recommended regimens because they know little about disease in general, they are told less than they want to know, and the purpose and mode of action of the medication is not understood.[26] Patients often stop taking a medication when they feel better. One study showed thirty percent of the patients who stopped taking prescribed penicillin before they should have according to physician's instructions gave the reason that they felt well.[3] Over half the patients in another study in which penicillin was prescribed for 10 days had stopped taking it by the third day.[27] While most of these patients knew the diagnosis and understood the instructions, perhaps they were not given an adequate explanation of the reasons why penicillin needs to be continued even after symptoms are gone. A corollary discovery in this study was that often penicillin was prescribed when it was not medically indicated. Prescribing unnecessary medications is not only costly to the patient but also has a deleterious effect on patient confidence in physician judgment.

D. Unclear Instructions

A corollary to the problem of inadequate understanding is the situation in which instructions are not clear. A patient, even if willing to adhere to the medical regimen, cannot follow instructions they do not understand.[7,26,28,29,30] If the health care provider does not describe the directions clearly or completely to the patient and as a result the patient cannot follow the regimen, the medication or other treatment may be to no avail or may even endanger the patient's health.[25,30]

Language problems may prevent the patient from understanding instructions for medication or treatment. The problem exists when provider and patient are not fluent in the same language as well as when the provider uses medical terminology or other vocabulary which is unfamiliar to the patient. Often patients will not admit they do not understand a word, are afraid to ask for further explanation, or may not even realize they misunderstand.[21]

Medical instructions are often vague, imprecise, or ambiguous, and as a result, the patient follows what he believes to be the proper procedure even though another may have been intended.[31] In one study a questionnaire was administered to 162 persons to determine the patients' understanding and interpretation of certain doctors' instructions. In a question which listed 18 foods and asked which the patients would avoid if the doctor said to avoid starch and sugar, forty-three percent identified 6 or less of the 12 foods which should have been avoided. Another question posed four possible responses to the instruction to take one tablet every four hours. Although seventy percent said they would take one every four hours while awake, the other thirty percent would have taken six while awake, awakened in the middle of the night to take them, or taken one with each meal.[15]

A gap exists between verbal instructions understood by the patient while at the center and those which are remembered by the time he arrives home. The patient can easily forget how much, what time, or how often the physician suggested something be done even if there is only one regimen to follow, and the problem is greater if the regimen is more complicated. When the patients demonstrate extremely high or low anxiety levels, they remember fewer instructions and are less likely to follow those remembered.[11, 20, 31]

E. Characteristics of Regimen

The treatment regimen itself has a great influence on patient compliance. Complex treatment or those requiring extensive changes in a patient's lifestyle, are less likely to be adhered to than single regimens requiring only minor adjustments in patient behavior.[10,13,15,32] The major problems identified with this aspect of noncompliance are related to the mechanical aspects of a particular regimen, the length of time the medication or therapy is required, and the degree of behavior adjustment needed to follow the recommended regimen.

1. Mechanical Complexity

Mechanical complexity includes problems associated with the number of different medications or treatments which are recommended and the frequency with which they must be performed. The more complex the regimen is, the more likely it is that the patient will not comply.[3,10,11,19,31] Noncompliance related to complexity may be a result of confusion, frustration, forgetfulness, or other factors. It is also possible that the patient lacks the skills necessary to perform according to instructions. For example, the patient may find it difficult to swallow the large capsules the physician prescribed whereas the patient may have easily complied with a liquid regimen.

2. Long Term Medication and Treatment

Many centers do not provide supportive service to patients with long-term illnesses or disabilities, yet these present special problems leading to noncompliance.[28] A tuberculosis treatment study indicated noncomplicance increased from 18% at the end of the first year to 61% at the end of the fourth year.[33] Hypertension treatment programs show 50% dropout rates.[31] Arthritis is another chronic disease with few dramatic forms of therapy and as a result, patients are often not likely to follow the regimen, especially when long-term preventive self-treatment is involved.[34] There is also evidence that prescription adherence deteriorates rapidly after the fifth day of a course of treatment. This makes the efficacy of prolonged courses of oral penicillin for treating streptococcal throat infections doubtful.[27,35] Whether it is because the patient sees little apparent or immediate value in the treatment, a habit pattern is not established, or because symptoms are nonexistent, adherence to treatment regimens which require patient self-care tend to drop off over time.

3. Behavioral Change

Noncompliance also increases when the regimen requires behavioral changes which are difficult or radical departures from existing behavior patterns or habits.[10,11,31,35] Given a combination of three regimens, patients will probably comply with the two which are easiest to perform.[1] A patient is more likely to take medication than to adhere to a special diet. The backsliding effect of decreased adherence over time which occurs with long-term illnesses is also common with complex behavior changes. Studies show that only twelve percent of diabetic patients who receive nutritional instructions follow their prescribed diet. In these studies it is clear that a single or a few brief educational encounters with a nutritionist cannot be expected to succeed in changing a person's lifelong eating habits.[12]

4. Demographic Data

Demographic studies designed to identify noncompliance are inconclusive. Some suggest females are more likely than males not to follow a medical regimen, as are older people, those in lower socioeconomic groups, and the less educated.[1] Other studies, however, find no variation in adherence which can be attributed to age, sex, race, marital status, religion, occupation or education.[8,10,36]

Providers have little success in predicting noncompliance in individual patients.[7] There is no dependable profile of the noncompliant patient. Any given patient may change from compliant to noncompliant from one illness or regimen to another or during a particular illness or treatment.[36] The safest approach is never to assume total adherence with any patient and to monitor adherence periodically.[35]

Program Strategies

The following are examples of program strategies which may increase patient adherence to regimen.

A. Changes Involving Staff

1. Expansion of educational roles of staff members. Special capabilities and expertise of many members of the health team give them a logical role in education efforts.

    - Physicians are often responsible for negotiating a workable regimen with the patient. They remain the head of the health team in most instances and their communication and relationship with the patient have a significant effect on whether or not the patient cooperates in the regimen. Their belief in the efficacy of the treatment and the way they demonstrate this belief to the patient directly influences the patient's decision to adhere.

    - Nurses and nutritionists traditionally are responsible for much of the education that takes place. They may be able to function more efficiently by offering classes instead of, or in addition to, individualized education.

    - Health aides selected from the target population have the advantage of being able to understand and communicate better with the patient than the physician or nurse in many instances.

    - Anesthetists have succeeded in reducing patients' needs for drugs and the length of their hospital stay significantly by educating them about post-operative pain and exercises to reduce the pain.[4]

- Pharmacists play important roles in selecting among products, educating patients about their medication, and providing other services to maximize patient monitoring and self-care.

- Outreach workers, by following up patients at critical intervals of treatment, may ensure continuation of regimens.[37]

2. Staff training in the following areas may improve the effectiveness of any education programs.

    - Interviewing techniques to encourage patients to report degree of adherence and any difficulties they are having with the regimen or other problems which may interfere with their ability to comply. Staff should also develop skills in determining patient attitudes and level of knowledge

    - Record-keeping to ensure that compliance behavior is well-documented

    - Communications skills, both among staff members to faciliate teamwork and with patients to improve interpersonal relationships. Skills in group process should be included to facilitate classes and group discussions

    - Judicious use of fear communications[19] or strong persuasive propaganda[33] as a means of encouraging adherence. Use of these techniques might be considered by staff

    - Sensitivity to patient's culture is an important aspect of communications. If there is a large Spanish-speaking or other non-English speaking population, staff members should be encouraged to learn that language, at least to the extent required for simple conversation or to take a medical history

    - Educational skills, for example, teaching techniques, and use and development of materials

    - Coordination of educational messages given to the patient through a multidisciplinary team approach to avoid gaps in messages or conflicting messages

B. Changes in the Regimen Itself

1. Medications may be simplified by:

   - altering the medication from a pill or capsule to liquid form. This method may be particularly advisable in prescriptions for children who often have difficulty swallowing pills,

   - choosing a strong dosage of medication which will only require one pill a day instead of two or three per day, and

   - when there are alternative drugs which would be effective, selecting the drug which requires fewer dosages per day or combines medications.[35] In some cases, the provider may need to weigh the effectiveness of the preferred regimen against the greater likelihood that a second choice regimen will be followed due to its simplicity, decreased side effects, or other factors.

2. For a necessarily complex, multiple, or long-term regimen the provider may:

   - demonstrate an actual favorable change accomplished by the providers' recommendations as immediately and dramatically as possible. For example, if the hypertension patient can measure his blood pressure, see it elevated, and then take medication and have visible evidence of its positive effects when the blood pressure is taken again and is lower, there may be greater success in changing behavior,

   - prescribe fewer and less difficult regimens initially, knowing that when several recommendations are given, the patient is more likely to follow those which are least difficult or least disruptive of the patient's lifestyle; or,

   - prescribe one phase of the regimen initially which the patient will be most likely to perform successfully. Once the patient has had a successful experience with the first aspect of the regimen and has received reinforcement and encouragement from the provider and a cooperative relationship is established, the patient may be willing to cooperate in a more complex regimen.[38]

- attempt to accommodate the regimen to the patient's daily routine or lifestyle.

3. Techniques which may help the patient take his medications on time and in the proper dosage include:

   - giving the patient a schedule chart to post on the wall at home,[25]

   - using a unit-dose system in which each capsule is individually wrapped; a color coded system where different colors indicate which time of day the drug is to be taken, or a calendar-packaged system, such as that used for birth control pills; and,

   - providing clear and precise instructions for taking the medication on the prescription label which reinforce the verbal instructions given to the patient.

C. The following are strategies aimed at difficulties encountered outside the clinic setting, including environmental and social factors.

   1. Mail-out systems for prescriptions

   2. Use of mobile clinics to make visits to convenient locations in the neighborhoods so that patients can come for periodic check-ups or to refill prescriptions.

   3. Coordination of efforts with various voluntary agencies. Instructional materials concerning specific diseases including pamphlets, slide programs, and films have already been developed by voluntary organizations and can be used to supplement a program dealing with adherence to regimen; some offer complete educational programs. Local affiliates often offer detection facilities and education programs free of charge.[22]

   4. Enlist the aid of volunteers from the community to do outreach into homes to reinforce health messages, monitor adherence, or refer people to agencies who can help patients with financial needs, housing problems, etc.

D. Reinforcement strategies

   1. It is important in promoting compliance that the patients receive encouragement and reinforcement and that the educational messages are repeated by

all who come into contact with them.[31] Staff must be sure that they are reinforcing the same message in order not to confuse the patients.

2. To counteract the backsliding effect of education efforts, that is the tendency for desired behavior changes to cease over time, it is necessary to make periodic efforts to reinforce the original educational message, the continued taking of a medication or the maintenance of a desired behavioral change.[12] Different educational strategies may be appropriate as time elapses to boost the effectiveness of the program.

3. Since long-term medications are known to have certain "drop-out" times,[35] educational messages and reinforcement should be given at these points. For example, the time at which most women discontinue birth control pills is one month after beginning them because they have experienced unpleasant side effects and expect them to continue and because they have not developed a habit of taking them. Therefore, reinforcement through a follow-up visit or phone call to determine if there are any problems with or questions about the regimen and to encourage its continuanace would be effective at this time.[37]

4. Group discussions involving individuals with the same problems are sometimes the most effective source of reinforcement.

5. It is important, particularly with chronic illness or regimens that require a change in habit or behavior, to enlist the cooperation of the patient's family or others who are important in his life.[11] Their involvement and support of the provider's recommendations increase the likelihood that they will be accepted and followed by the patient.[39] A study to determine the role family expectations played on a patient's splint wearing regimen for arthritis showed that those patients who perceived the least expectation from family members to wear the splint wore it the least and those where family expectation was high wore it more.[34]

6. A contract with the patient for adherence should be considered. This involves provider and patient agreeing on expectations each has for the other's behavior related to the patient's adherence, and helps to establish a cooperative, working relationship.

E. Evaluation

Methods of determining degree of adherence vary according to the type of regimen. Adherence to some regimens, such as the recommendation to stop smoking or to exercise, cannot be measured accurately or objectively since they depend on reliability of patient reports; whereas other regimens, such as taking medication, can be determined through mechanical tests such as urinalysis. A comparison of medical records of patients receiving education, before and after the program, or with a group who received no special education, may be used. A more reliable estimate of adherence will be gained through use of a combination of the following methods:

1. Record reviews--A variety of medical information collected from patient records can document the effectiveness of educational programs.[40]

2. Broken appointments, irregularity of clinic attendance, return visits for the same problem, or visits to the clinic or emergency room for conditions which should have been prevented by adherence to the prescribed regimen indicate a possibility of noncompliance.[32,36]

   - Number of and reason for return visits can serve as evaluation criteria when certain conditions are most likely to result from defection from the treatment regimen.

   - Number of and reasons for emergency room use. For example, if asthma patients are following their regimen, they should not appear at the emergency room with a crisis; if diabetics are maintaining a proper diet and regular insulin injections, they should be able to avoid diabetic coma. Therefore, a count of number of emergency room visits for asthma crisis and diabetic coma reveals the amount of patient adherence.

3. Patient diary--The patient could record the activities of his treatment regimen daily. For example, the diabetic patient can keep a record of everything he eats and the nutritionist can review the diary and determine if the patient is making the proper food selection.

4. Pre-test and post-test comparison--Tests may be administered to measure levels of patient knowledge; however, it is important to remember that while certain knowledge is necessary in order to comply, having the knowledge does not mean that the patient is adhering.[40]

5. Remaining under medical supervision and follow-through of referrals to other sources of care are a means of determining patient compliance.[19]

6. Patient report-Simply asking the patient if he has been taking the medication as prescribed or following the treatment regimen may be helpful although there is a tendency for this method to result in an overestimation of compliance.[19,27]

7. Drug excretion tests--Tests for detecting excretion of a drug or a marker given with the drug provide an objective means of determining if medication has been taken. It is possible, however, that a patient will take medication more faithfully just before he makes a clinic visit, when he knows he is to be tested, than between visits.[19,27,35,36]

8. Pill counts--Nonadherence can be detected if the patient brings left-over medication to a follow-up appointment and the amount remaining reveals he took less than was prescribed.[19,27,41]

9. Direct observation--Watching the patient perform part of the regimen offers feedback on adherence. For example, observing the diabetic patient follow the procedure for administering insulin will indicate if the patient is doing it correctly or needs further instruction.[40]

10. Clinical tests--Various clinical tests, depending on expected outcome of the regimen, are useful in measuring adherence. They may include blood tests, weight measurements, blood pressure measurement, and others.[40,41]

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Section VI

Notes on the Administration of Health Education Programs

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The purpose of this section is to present some general notes concerning issues which health education administrators should consider in planning and implementing effective health education programs. Health education activities may be initiated by a variety of actors and take place within a variety of settings including neighborhood health centers, health maintenance organizations, hospital outpatient clinics, public health departments, mental health centers, and the like. As a result, health education administrators must be capable not only of managing their own health education units, but also must be sensitive to the issues faced by these other settings. This sensitivity assumes added importance given the fact that the success or failure of health education efforts is often highly dependent upon effective skills in planning and negotiating with program managers from these other settings.[1] Several overall characteristics[2] of the current health care system highlight these organizational complexities.

A. Expansion of Service Delivery

The rapid development and proliferation of health services has resulted in an increase in the number of service recipients as well as the absolute number of various service programs which may be offered.[3] This trend, in turn, has raised many issues and problems including:

1. determination of boundaries and roles of health care providers and agencies;
2. duplication of services;
3. determination of the most effective and appropriate allocation of scarce fiscal and manpower resources; and,
4. establishment of a comprehensive set of activities for insuring quality of care and for assessing overall program effectiveness.

Whereas administrators traditionally may have been concerned exclusively with overall responsibilities such as staff recruitment, training, and program monitoring, the modern health program administrator must also be competent in planning, negotiating and standard-setting.

B. Funding

All health administrators are faced with a variety of funding issues including developing and managing a multi-source funding base, designing services which will be eligible for third-party reimbursement, and meeting the myriad of requirements imposed by federal, state, and local fund providers. In addition, many administrators must be knowledgeable about the technical aspects of fiscal management such as the installation and operation of automated reimbursement systems.

C. Consumer Involvement

Current federal legislation and accompanying federal agency regulations continue to emphasize the need for consumer (client) and community involvement in planning and evaluating health care services. Most services programs supported by the federal government mandate the existence of governing and advisory boards for general policy determination. Efforts must be made to involve community and service recipients in all phases of program operations including the assessment of health care needs, setting program priorities, and evaluation of program outcome. Once consumer involvement is obtained, conflicts are likely to arise among competing consumer and provider interests. The overall outcome of these legislative requirements may be to bring health administrators into increasing contact with their own board members and board members from other health care agencies.

D. Diversity of Staff

The diversity of professional and paraprofessional staff participating in health care efforts leads to unique administrative problems and situations. These include: interdisciplinary rivalry; role blurring; inadequate and/or misinterpreted communication; differential salary schedules and fringe benefits; delineation of complex work flows; negotiation with representatives of various unions; and, the development of personnel and program policies which insure both managerial control and professional autonomy for all staff.

E. Coordination With Other Health Programs

Finally, as suggested above, health education administrators often function as a link between various health organizations. As such, they will be subject to unique pressures from within their own program as well as expectations imposed by other agencies. Many issues will arise such as interagency mistrust, fear of being coordinated or coopted by other agencies, possible violations of client confidentiality because of the exchange of information, and fears that one agency's program may be rivaled, duplicated, or reduced in stature by another.

Management Skills and Strategies

These basic characteristics of the health care system suggest that health education program administrators must be competent in many administrative skills. They must also be thoroughly acquainted with the programs and policies of each segment within the total care system. Such knowledge will increase the administrator's ability to communicate intelligently with other professionals and to determine the degree to which health education strategies are applicable to various settings. Furthermore, funding, governance, and service criteria require the administrator to initiate and perform technical functions including needs assessment, budgeting, forecasting, supervision, and program evaluation. Knowledge of how other programs perform these functions will help to insure that health education efforts are responsive and therefore acceptable to professionals in cooperating agencies.

In addition, other specific strategies may be utilized to enhance collaboration between the health education staff and collateral agencies.

(1) Involvement of health education staff in designing and participating in key direct health care activities including intake, determination of appropriate treatment regime, referral and follow-up, and development of health outreach services

(2) Integration of health education staff in case coordination and management through participation in case conferences and as members of treatment teams

(3) Participation of the health education staff in the development of principles for clustering services in the health care agency. For example, clustering overall services by age group (e.g. the aged) or problem target group (e.g. drug addicts) may suggest not only more effective strategies for designing and implementing services but also the content and approach which should be utilized in providing health education.

(4) Consideration of health education as an element of a patient's entry into the health care system. The health education program may (a) serve as the primary unit to provide essential information and referral services; (b) assist in helping the patient understand and cope with the treatment plan; or, (c) act as an interstitial unit between several direct service units.

(5) Participation by health education staff in the design and execution of program evaluation activities. As part of the total data analysis effort, the health education administrator may provide other health care personnel with specific suggestions for improving patient care and/or overall program operations. In such instances, the "education" aspects of the health education program are directed toward professional colleagues rather than patients.

Need for a Clear Focus

Given the variety of services and individuals involved, the health education administrator must exert particular control over basic management functions if a clear focus of activity is to be maintained. Fragmentation and lack of a clear direction may result either from the myriad demands placed upon the program from other services and professionals or, conversely, from unrealistic expectations held by over-enthusiastic staff within the health education program itself. The administrator and staff must jointly define program objectives, select specific target groups, set specific goals, determine professional standards, and adequately communicate anticipated results, deadlines, and evaluation criteria to all actors in the system.[4]

The diversity of activities included within the term "health education" and the wide array of settings and tasks in which health educators may be involved are highlighted in this report. The potential of this important program for improving patient care and its overall contribution as a field of practice within the field of public health has been clearly demonstrated. In addition to implementing the basic program processes outlined in the Program Planning Model in Section I, the health education program manager must recognize the necessity of establishing interdependence between the program and other service units. Unlike the traditional public health administrator who may function within a rigid bureaucratic structure, the successful health education manager must be imaginative in terms of moving within different organizational structures and initiating tasks which may be highly varied. Anshen[5] predicts that future managers will need to be skilled in generating and manipulating ideas; in encouraging and mobilizing diverse resources to solve problems; in developing complete systems (versus the exploitation of a single product); and, in focusing upon the future through utilizing various forms of technological, political, and social forecasting.

The eclectic nature of health education programs and the implications of this diversity for the health education program manager have been noted. Managers must enter their role prepared to be subject to many pressures, to accept and deal with rapid change, to embrace trial and error, and, in the final analysis, to consider health education efforts as one interdependent portion of a highly diverse and changing health-care scene.

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Section VII

Health Education in Ambulatory Care Settings

A Summary

The summary presented below reflects a distillation of thoughts and findings gathered during the course of the project. It is most useful as a summary checklist which can be referred to from time-to-time to determine if particular activities have been developed on the basis of those elements of health education theory which are most likely to result in successful programs.

1. Health education incorporates all influences on the individual's health-relevant knowledge, attitudes and behavior.

   - Each contact with the ambulatory care center should be a positive learning experience.

   - Virtually all personnel in the center who have contact with consumers do, or potentially could, exert such influence, either deliberately and planned or fortuitously. They must be aware, therefore, of the way in which their actions and the manner in which services are delivered can affect the consumer's behavior.

2. Continuity of care -- seeing the same or a small number of providers -- is a significant factor in promoting greater personalization of care, more efficient use of health care personnel and facilities, and preventive health practices.

   - The use of a team approach to provide all aspects of care, including health education, promotes this continuity.

Program Development

3. Providers, administrators, and funding sources, as well as consumers, must be involved in developing and implementing the program in order to ensure that it receives adequate support including budget, equipment, supplies, space, time, and the cooperation of all personnel.

   - Staff agreement and support for an activity is essential if it is to be undertaken successfully.

- Because provider resistance to the program may be strong, special efforts should be made to identify elements of the health education program which will be useful in promoting, not disrupting, each staff member's work.

- The documentation of program success is an important tool for gaining and maintaining this support.

4. One person with knowledge of educational approaches should be given the responsibility for the overall planning and development of the health education program.

    - This position should be located within a component of the administrative hierarchy which will ensure coordination of all programs and a delegation of power sufficient to implement them.

5. The resources of the organization's professional personnel are utilized most fully and effectively if the educational activities are an integral part of the total of health services provided and take place in a systematic, coordinated, and centrally guided way.

    - This requires clear allocation of health education functions and responsibilities to the entire staff and the development of clear goal statements for all educational activities.

    - Resources, including money, should be designated specifically for the health education program.

6. A team approach should be utilized and all personnel should be involved in the development and implementation of health education activities.

    - The physician, because he is usually the head of the health team, must be included before other staff can be involved successfully.

    - In-service training should be provided to teach the principles and methods of health education. This training should include not only the use of educational materials but also the development of communication skills, acknowledgment of the patient's right to make their own decisions, and an understanding of the complex factors which affect health behavior.

    - Because physicians and nurses are more apt to be accustomed to working with patients on a one-to-one basis, they are likely to require additional training in group process skills.

7. The planning and development of the program should involve both consumers and providers and follow the basic steps of program planning--assessment of educational needs, definition of goals, selection of appropriate methods, effective implementation, and evaluation.

   - A broad range of staff including all levels of personnel, should be included from the very beginning when initial plans are developed.

8. The planning and implementation of a comprehensive health education program may take from 2-5 years.

   - Although some positive results may come quickly, everyone, including funding sources, must recognize that significant effects such as lasting behavioral changes are achieved very slowly.

Techniques

9. Sound health behavior is encouraged most effectively when providers and consumers are actively involved in the educational process.

   - Educational objectives must be made clear and must be communicated and accepted by all involved, staff, patients and their families, and funding sources.

   - Health education must be a process of interaction rather than merely a flow of predetermined information from provider to consumer.

10. It is essential that health messages be repeated consistently throughout the center.

    - Changes in individual behavior are complex and often require long periods of time. Because the provision of information alone seldom results in behavior change, the message must be repeated and reinforced utilizing a variety of educational approaches, not just one isolated activity.

11. The goal of the program may or may not be behavior change.

    - The individual should receive all the information and support necessary to make an informed decision. It is still his prerogative, however, to make a decision which ultimately may adversely affect his health status.

12. Because it is difficult to change individual behavior, emphasis should be placed on providing an environment which supports such change and minimizes the barriers the individual encounters.

    - Providers should first focus on those actions which they, themselves, can take which will encourage the desired behavior change, e.g. attractive facilities, convenient hours, continuity of care, non-smoking by staff.

13. Since organizations differ from one another in a variety of aspects, each should develop its own clearly defined approach to health education rather than utilize an inappropriate model.

14. While some aspects of an organization's educational program may be general, others may have to be tailored specifically for the needs of particular patients, e.g. hypertensives, diabetics, individuals with minimal reading skills.

    - Approaches must have personal relevance for the individual and be closely related to his own goals and experiences.

    - Emphasis must be placed not just on content but on the method of presentation in order to generate enthusiasm and interest.

    - Techniques which utilize small groups and individual counseling should be emphasized.

    - Coercion is not an acceptable method.

    - Fear-inducing tactics should be utilized only after careful analysis of their potential counter-productive effects.

15. While most of an organization's health education is likely to be addressed to patients, efforts should also extend into the community as a potential pool of future patients and also to help residents protect themselves against avoidable illness that could transform them into new or returning patients.

16. Evaluation of all health education activities is a necessary element for ensuring that present approaches and methods are effective and for generating ideas for rendering them more effective.

- The primary aim of health education is to assure sound health-related habits on the part of the consumer. The final measure of educational effectiveness, therefore, is to be found in consumer behavior, although measures of knowledge, attitudes and motivations will be useful for certain purposes. Evaluation activities should include techniques which document behavior change.

17. In order to monitor an organization's educational program, assure its optimal effectiveness, and identify weaknesses, it is necessary to introduce systematic recording procedures, periodic reviews, and regular discussions of health education at staff meetings.

    - Emphasis must be placed not on reporting that activities have or have not been acquired but on their effectiveness in promoting behavior change.
    - Flexibility in a program is essential to ensure that activities can be modified or eliminated when their ineffectiveness is documented.

Section VIII

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Reports on a study at Children's Hospital Medical Center in Boston of the factors which might contribute to patients breaking appointments and failing to cancel them in advance. Study involved two groups, lower class white or black patients living near the hospital and using it as major source of medical care and a higher social class from a distance using the hospital as a referral center. A major factor in appointment breaking was lack of personal doctor care by a single doctor. Other factors were: finding coming to the hospital upsetting, inability to accept diagnosis, objections to hospital procedures, and not understanding what the doctor said.

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Article cites experiment in which families receiving comprehensive care had fewer hospitalizations, fewer operations, more physician visits for home supervision, and fewer physician visits for illness compared with a control group. Author feels family confidence in and rapport with physician may increase compliance with treatment regimen but has no definite data at present.

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Changes in attitudes and satisfaction of low income families were measured by questionnaire in evaluating comprehensive pediatric care. No changes in general attitudes but increase in satisfaction with delivered care and increased preference for primary care physician.

Experimental group received comprehensive, family-focused pediatric care for 3 years. After this time the greatest difference between experimental and control groups was 60% of mothers in experimental group satisfied because of reduced waiting time and only 40% of control group mothers expressed satisfaction. Also, mothers in the comprehensive care clinic found quality of relationship with doctor and nurse to be more satisfying.

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Study to identify factors contributing to broken appointments. Urgency of appointment, differentiated from medical importance, emerged as a significant influence on clinic attendance. Urgent appointments were broken less frequently than routine ones. Medical urgency is one of the most powerful influences on clinic attendance. There is a possibility that more adequate communication by physicians of urgency of a medical situation may increase numbers of appointments kept. Rate of failure of mother to return for appointment could be decreased by exercising discrimination in assigning return appointments of a routine nature.

American Public Health Association, Community Health Education Project. Consumer Health Education: A Directory, DHEW Publication No. (HRA) 76-607, 1975.

Contains brief descriptions of resources available from 49 voluntary organizations for use in health education programs.

Anderson, J.G., "Demographic Factors Affecting Health Services Utilization: A Causal Model," Medical Care, Vol. 11, No. 2 (March-April 1973), pp. 104-120.

Presents a causal model relating patient days, hospital admission rates, and average length of stay to demographic characteristics of New Mexico counties. Suggests that supply of hospital beds is a major determinant of utilization in a given area. Author found that socioeconomic factors including income, educational level, and ethnic group had little effect on use of hospital facilities. Age and the degree of urbanization do have an effect on utilization. Findings suggest that inpatient hospitalization care is substituted for ambulatory care in areas where physician population ratio is low.

Paper reviews four sets of factors influencing utilization of health services. A causal approach model is developed which would permit predictions as to future demands on a health care system resulting from changes in the composition of the population served.

Andersen, R. and Newman, J.F. "Societal and Individual Determinants of Medical Care Utilization in the United States," *Milbank Memorial Fund Quarterly*, Vol. 51, No. 1 (1973), pp. 95-124.

Discusses theoretical framework of utilization including characteristics of health care delivery systems; changes in medical technology and social norms relating to definition and treatment of disease; and, individual determinants of utilization. Author states that behavioral model of health services utilization is dependent on: a predisposition to use services; ability to secure services; and, the illness level (high in importance as major determinant of utilization). Intervention potential of each of above variables should be examined in order to determine which is best suited to bring about a change in utilization.

Anshen, M. "The Management of Ideas," in *Tomorrow's Organizations: Challenges and Strategies*, Jun, Jong S. and Storm, William B. (eds.). Glenview, Illinois: Scott, Foresman, and Company, 1973, pp. 394-404.

An analysis of how and why management requirements are changing. Anshen contends that the main tasks of management have historically been efficient administration of physical resources, people, and money. He predicts that because of rapid changes in technology, markets, information systems, and social expectations there will be a profound change in the major task of management. Top management in the future will have to be skilled in the generation and manipulation of ideas. Unless a manager can focus on the implications to his organization of the rapid changes going on in our modern world, his organization will become obsolete. Examples are given. Implications for training and education are analyzed.

Atwater, J.B., "Adapting the Venereal Disease Clinic to Today's Problem," *American Journal of Public Health*, Vol 64, No. 5 (1974), pp. 433-437.

Describes and analyzes the experience of a venereal disease clinic which increased its volume of clinic attendance approximately 150% from January, 1970, through April, 1972. Efforts leading to the increase included: personal contacts through an outreach worker; mass media publicity; and, a change from the traditional contact-tracing procedure to a focus on the individual's responsibility to make contacts aware of the problem and see that they visit the clinic.

Badgley, Robin F. and Furnal, Marilyn A. "Appointment Breaking in a Pediatric Clinic," *Yale Journal of Biology and Medicine*, Vol. 34 (October 1961), pp. 117-123.

Study analyzes 774 appointments at the pediatric outpatient clinic at Grace-New Haven Hospital in Connecticut to determine factors which contribute to broken appointments. Identified appointment breakers as lower class whites, blacks, and parents with very young children. Personal reasons were given 75% of the time as reported cause of broken appointments.

Becker, M. H. and Green L. W. "A Family Approach to Compliance with Medical Treatment: A Selective Review of the Literature", *International Journal of Health Education*, Vol. 18, No. 3 (July-September 1975), pp. 173-182.

Discusses compliance with medical advice in the context of patient-family interactions including: 1) dependency of many on family members' assuming responsibility for their adherence; 2) impact on health care of division of roles within family; 3) influence of family members on patients' adherence. Reviews literature to support and encourage usefulness of family approach as explanation and means of improving compliance.

______ and Maiman, L. A. "Sociobehavioral Determinants of Compliance with Health and Medical Care Recommendations," *Medical Care*, Vol. 13, No. 1 (January 1975), pp. 10-24.

Study reviews the literature on patient acceptance of recommended health behaviors and attempts to identify variables which are consistent predictors of compliance. The Health Belief Model is used to explain aspects of sick role behavior. Health beliefs as well as health related motivations and perceptions, patient-practitioner relationships, social influence, and demographic and personality variables are discussed in terms of their influence on compliance with medical regimen. Suggestions are made as to appropriate interventions. Further exploration aimed at increasing compliance is recommended.

Bellin, Seymour S., Geiger, H. Jack and Gibson, C.D. "Impact of Ambulatory Health Care Services on the Demand for Hospital Beds," *New England Journal of Medicine*, Vol. 280, No. 15 (April 1969), pp. 808-812.

Survey to determine if newly opened neighborhood health center (Tafts NHC at Columbia Point in Boston) had impact on admissions of inpatients at surrounding hospitals. In the 12 months before the center opened, hospital admissions were 10.7 per 100 persons. During the first year the center was opened, admissions to hospitals for all diagnoses decreased 41%; in the second year the decrease was 75% from the first year. After the two years, hospital admissions in the area decreased 84% from what they were one year before the center opened. Total number of bed days in hospital had corresponding decrease of 86%. Authors attribute the decline in hospital admissions to effective outpatient treatment of illness and injury, since preventive and community medicine were second priority items.

Beloff, Jerome S. and Korper, Mieko. "The Health Team Model and Medical Care Utilization: Effect on Patient Behavior of Providing Comprehensive Family Health Services," Journal of the American Medical Association, Vol. 219, No. 3 (1972), pp. 359-366.

Article focuses on organizational structure as a means of affecting utilization patterns. Family health care program at Yale University School of Medicine stresses comprehensive care by family-oriented health care team, including: change from illness response pattern to positive health orientation; increased use of nurse counseling; psychological guidance; employment assistance; health education; decreased use of physician services for illness care; and, emphasis on health maintenance.

Appropriate utilization can be encouraged by health education, early detection, more comprehensive involvement of patient, and increased emphasis on preventive medicine. Since the program at Yale began:

- physician contacts decreased 32% during the last 2 years;
- nurse utilization equaled 45-50% of all patient professional contact;
- health aide contacts increased 63% during the last 2 years of program;
- 78% of appointments were scheduled instead of walk-in; and,
- no show rate decreased from 15-30% to 2-7%.

Bergman, A.B. and Werner, R.J. "Failure of Children to Receive Penicillin by Mouth," New England Journal of Medicine, Vol. 268, No. 24 (June 13, 1963), pp. 1334-1338.

Study documents the number of children who actually received prescribed medication. Pill counts and urine tests were used to measure compliance to a 10-day course of oral penicillin. Over half of the patients had stopped taking the drug after the 3rd day, 71% stopped after the 6th day, and 82% after 9 days, although 95% of the parents understood the directions for drug taking. Authors found interviewing parents to be an unreliable way of assessing drug utilization as 83% reported that all doses had been given. The authors concluded that no matter what directions the physicians gave, parents stopped giving medication when symptoms disappeared, and that, therefore, penicillin injections are more effective as well as more economical.

Biblo, Robert L. "Marketing and Enrollment Strategies for Prepaid Group Practice Plans," *Marketing Prepaid Health Care Plans: A Collection of Approaches*, U.S. Department *of Health,* Education, and Welfare (DHEW No. (HSA) 75-6207; 1972), pp. 5-40.

A detailed analysis and description of marketing problems and strategies for HMOs. Designed as a practical guide either for people who are planning programs or for those already marketing HMOs. A description of the experience of the Harvard Community Health Plan is included as a case study. Also, traditional marketing techniques are compared to those necessary for a prepaid group practice. Recruiting and training a marketing staff is analyzed.

Blackwell, B. "Drug Therapy Patient Compliance," *New England Journal of Medicine*, Vol. 289, No. 5 (August 2, 1973), pp. 249-252.

Discusses factors of the illness, the patient, the physician, the medical regimen, and the treatment setting which are associated with noncompliance. Author stresses that physicians must recognize these characteristics in order to plan and implement a treatment regimen to reduce noncompliance.

Bowen, R.G., Rich, R., and Schlottfeld, R.M. "Effects of Organized Instruction for Patients with the Diagnosis of Diabetes Mellitus," *Nursing Research*, Vol. 10, No. 3 (Summer 1961), pp. 151-159.

Study to determine improvement in patient well-being for a group of diabetic patients following a program of organized instruction conducted by nurses. Data collected for experimental and control groups through tests of knowledge, skills, and attitudes and through analysis of patient medical records. Clinical indices of patient well-being included blood sugar, urine tests for the presence of sugar, weight, and clinical complications. Patients receiving organized instruction demonstrated significantly greater gain in knowledge about diabetes and in skills necessary to carry out treatment. These patients showed greater improvement in some medical outcomes than did control patients, but the changes were not significant and, in fact, the control group showed better results for hyperglycemia.

Bush, Ann S. *Group Practice: Planning and Implementing a Community-wide Prepayment Plan for Health Services*. New York State Health Planning Commission, Office of Planning Services, 1971.

An overview of the development and implementation of group practice plans in the United States. Written to encourage the development of community-wide prepaid group practice plans. Included are: trends in the development of group practice; types of medical groups and forms of organization; advantages and disadvantages of group practice; trends in the development of community prepaid group practice plans; brief descriptions of ten existing community-wide group practice plans; and, factors involved in planning and implementing a community prepaid group practice plan.

Curtis, E.B. "Medication Errors Made by Patients," *Nursing Outlook*, Vol. 9 (May 1961), pp. 290-291.

Study of the incidence of medication errors by elderly patients in a home care program. Sixteen of 26 patients interviewed were taking at least one inaccurate medication, with more mistakes occurring as the number of medications prescribed increased. Patients with a better understanding of the purpose of the medicine made less mistakes. Importance of follow-up checking and reinforcing teaching is suggested.

Davis, M.S. "Physiologic, Psychological and Demographic Factors in Patient Compliance with Doctor's Orders," *Medical Care*, Vol. 6, No. 2 (March-April 1968), pp. 115-122.

Paper examines the characteristics of patients, including demographic characteristics, physiologic aspects of the illness, and psychological traits, as they relate to adherence to medical advice. Results of an evaluation of 154 patients in a general medical clinic indicated that demographic variables did not influence compliance, but physiologic and psychological variables did. Author suggests that early identification of the noncompliant patient may enable providers to use health education programs to improve compliance.

________. "Variations in Patients' Compliance with Doctors' Advice: An Empirical Analysis of Patterns of Communication," American Journal of Public Health, Vol. 58, No. 2 (February 1968), pp. 274-285.

Paper discusses aspects of patient characteristics, medical regimen, and personal influence of others which affect compliance, but concentrates on the effect of the doctor-patient relationship. Data collected through tape recordings, patient interviews, and questionnaires completed by physicians. Twelve categories of doctor-patient interaction were analyzed. Results demonstrated the importance of establishing good doctor-patient rapport in order to encourage a positive orientation and commitment to the relationship and, ultimately, greater cooperation with medical regimen.

________ and von der Lippe, R.P. "Discharge from Hospital Against Medical Advice: A Study of Reciprocity in the Doctor-Patient Relationship," Social Science and Medicine, Vol. 1 (1968), pp. 336-342.

Study of factors involved in patient's leaving the hospital against medical advice. The life situation of the patient, inadequate preparation for hospitalization, the doctor-patient relationship, and reactions to role expectations are discussed.

Doak, Cecilia Conrath, "The Health Educator: Building Credibility as a Change Agent in a Medical Setting," Dorothy Nyswander International Symposium: Papers on Theoretical Issues in Health Education, September 27-28, 1974, pp. 1-16.

An analysis of the significance of establishing credibility if a health educator is to be an effective agent for changing peoples' behavior. The historical development and definition of health education are discussed briefly and six principles of health education originally cited by Dorothy Nyswander in 1956 are updated to illustrate how the technical competency of a health educator can build credibility. The interpretation of what is involved in the education process is particularly stressed. Although the medical practice setting is the focus for the paper, the principles are clearly applicable to other health education settings.

Donabedian, A. and Rosenfeld, L.S. "Follow-up Study of Chronically Ill Patients Discharged from Hospital," Journal of Chronic Diseases, Vol. 17 (September 1964), pp. 847-862.

Article describes study of 82 patients with heart disease, arthritis, or diabetes before and after hospital discharge to determine if physicians' recommendations were complied with and reasons for non-compliance. More than half of the patients did not comply with at least one of the recommendations, with those about diet being neglected more than others. Reasons for non-compliance related to the attitude toward or understanding of physicians' instructions. Includes extensive review of compliance literature.

Drucker, Peter F. Management: Tasks, Responsibilities, Practices. New York: Harper and Row, Publishers, 1974.

An analysis of management -- first the tasks and requirements, and then the work of an organization and the skills needed to perform that work. Management is treated as a discipline and not simply as common sense. The author presents both the knowledge we have about management and the areas in which more information is needed. The emergence of management is discussed in terms of its historical development, its effect on society, and its future. Chapters 11-14, pp. 130-166, in particular, discuss the management of service institutions for performance.

Egbert, Lawrence D. et al. "Reduction of Postoperative Pain by Encouragement and Instruction of Patients," New England Journal of Medicine, Vol. 270, No. 16 (April 1964), pp. 825-827.

Study of effects of instruction, suggestion, and encouragement on severity of postoperative pain. Patients receiving such special care left hospital an average of 2.7 days earlier than control group and postoperative narcotic requirements were reduced by one half.

Feinstein, A.R., et al. "A Controlled Study of Three Methods of Prophylaxis Against Streptococcal Infection in a Population of Rheumatic Children: II. Results of the First Three Years of the Study, Including Methods for Evaluating the Maintenance of Oral Prophylaxis," New England Journal of Medicine, Vol. 260, No. 14 (April 2, 1959), pp. 697-702.

Examined the effectiveness of three prophylactic regimens in preventing streptococcal infections and rheumatic recurrences in 391 children who previously had rheumatic fever. Used patient interviews and pill counts to determine adherence to oral prophylaxis regimens. Penicillin injections found more effective than sulfadiazine or penicillin by mouth.

Feldman, Saul (ed.). The Administration of Mental Health Services. Springfield, Illinois: Charles Thomas Publishers, 1973.

Presents a series of articles that relate to the administration of contemporary mental health services. These services, which have changed dramatically in the past decade, are presented as moving in the following directions: increased scope and resources; larger and more diverse staffs; complex organizational patterns; multiple funding sources; multi-unit systems coordinated with other services; sophisticated management information and evaluation techniques; closer involvement with government at all levels; greater community involvement; and, increased sensitivity to change. The result of these changes has been a severe need for improved administration. Articles in the book discuss the problems and issues involved.

Finnerty, Jr., F.A., Mattie, E.C., and Finnerty III, F.A. "Hypertension in the Inner City: I. Analysis of Clinic Dropouts," Circulation, Vol. 47 (January 1973), pp. 73-75.

Study of 60 hypertension clinic dropouts to determine reason for noncompliance. Found factors affecting patient attitude to be waiting time, understanding all aspects of illness, and physician-patient relationship. Clinic was reorganized using patient suggestions as guidelines. Changes included the provision of comprehensive care on 24-hour basis, appointment system, reminder calls for appointments, assignment of patients to a health team, medication provided at clinic, etc. Dropout rate reduced from 42% in 1966-69 to 8%, after changes, in 1970-71.

Francis V., Korsch, B.M., and Morris, M. J. "Gaps in Doctor-Patient Communication: Patient's Response to Medical Advice," New England Journal of Medicine, Vol. 280, No. 10 (March 6, 1969), pp. 535-540.

Investigates the effect of physician-patient communication on patient satisfaction and compliance with regimen through use of tape recordings, chart reviews, and pill counts. Compliance and satisfaction were significantly reduced when none of the patient expectations were met, there was a lack of warmth in the relationship, and an explanation of the diagnosis and cause of illness was not received. Perceived seriousness of illness, complexity of regimen, and practical obstacles also influenced compliance.

Freedman, J.L. and Fraser, S.C. "Compliance Without Pressure: The Foot-in-the-Door Technique," Journal of Personal and Social Psychology, Vol. 4, No. 2 (1966), pp. 195-202.

Requests for cooperation by presumably non-profit service organizations on noncontroversial issues were used to test the notion of greater likelihood of compliance to a larger request once one has agreed to a smaller request. Likelihood increased when requests were similar in issue, and even when not similar, after the first request was complied with.

Fuchs, Victor R. Who Shall Live? Health, Economics, and Social Change. New York: Basic Books, Inc., 1974.

Utilization of health facilities depends on health condition of the population as well as propensity to use health services for any particular health condition. The physician is also responsible because of his authority to make decisions affecting utilization. Physicians control the total process of care, and their decisions significantly influence the quantity, type and cost of service utilized.

Author cites need for physician extenders within licensed institutions (including physician assistants, nurse clinicians, pediatric assistants, nurse practitioners). Physicians are too expensive and often not suited to give primary, preventive emergency care. More extenders mean lower cost, improved access, and a possible rise in individual health levels. Also, an extender's care has been shown to be as high in quality as a doctor's care, and their ability to relate and communicate better with patients may increase patient satisfaction.

Galiher, Claudia B. and Costa, Marjorie A. "Consumer Acceptance of HMOs," Public Health Reports, Vol. 90, No. 2 (March-April 1975), pp. 106-112.

An analysis of consumer acceptance of the HMO based on the marketing experiences of four HMOs as related in interviews with the health plan staffs. New HMOs were found to be experiencing enrollment difficulties because of lack of consumer knowledge and understanding of the HMO. The paper emphasizes the elements necessary to educate people about the HMO concept and have them actually select it as an option. An understanding of behavior development and change and communication theory by the enrollment staff is stressed.

Gans, Shelton P. and Horton, Gerald T. Integration of Human Services: The State and Municipal Levels. New York: Praeger, 1975.

Discusses the rationale for integration of services and the kind of linkages which are involved. Comparative analyses are made of projects that have various forms of coordination from directed to voluntary. There is an extensive analysis and review of the integration of human services in the United States. Detailed cases studies on community programs are presented and there is background information on several states including: Florida, Utah, Maine, Illinois, and Georgia.

Geertsen, H.R., Gray, R.M., and Ward, J.R. "Patient Non-compliance Within the Context of Seeking Medical Care for Arthritis," Journal of Chronic Diseases, Vol. 26, No. 11 (November 1973), pp. 689-698.

Study showed that patients with arthritis who were irritated about long waiting lines, who felt the doctor did not spend enough time with them and was too business-like rather than personal in the relationship, and who lack faith in the effectiveness of the treatment regimen tended to be poor compliers. Over 70% of patients with faith in the treatment, who seldom have to wait to see the physician, and who felt the physician was personal in the relationship were full compliers as opposed to none who perceived any of the opposite conditions.

Gillum, R.F. and Barsky, A.J. "Diagnosis and Management of Patient Noncompliance," Journal of the American Medical Association, Vol. 228, No. 12 (June 17, 1974), pp. 1563-1567.

Reviews the literature and identifies major factors consistently related to noncompliance including psychological factors, environmental and social factors, characteristics of the regimen, and physician-patient interaction. Stresses the importance of physicians being educated and sensitized to the problem of non-compliance and suggests approaches relating to each of the factors to reduce the likelihood of noncompliance.

Glogow, E. "Effects of Health Education Methods on Appointment Breaking," Public Health Reports, Vol. 85, No. 5 (May 1970), pp. 441-450.

Study of effects of four different educational methods on appointment-breaking behavior of patients suspected of having glaucoma. No significant differences were found among these groups but all were significantly different from traditional referral methods. Concludes that it is not what the patient is taught but rather the manner in which information is conveyed which accounts for the difference.

Graber, Joe Bales, "Preventing Dependency: Protective Health Services," American Journal of Public Health, Vol. 59, No. 8 (August 1969), pp. 1413-1427.

An analysis of what currently should be done in the delivery of health services (as opposed to the treatment approach) to prevent illness and the resulting dependency. Specific recommendations are made and an example of the potential cost benefits is presented. A statistical appendix contains detailed information on diseases and causes of disability that are preventable or controllable.

Greenlick, Merwyn R. "Determinants of Medical Care Utilization: The Role of the Telephone in Total Medical Care," Medical Care, Vol. 11, No. 2 (March-April 1973), pp. 121-134.

A study of telephone use in a prepaid group practice (Kaiser, Portland). Since a significant number of medical care contacts take place by phone, the purpose was to determine alternative modes of dealing with problems presented by phone, or, as a minimum, assure that this aspect of medical care was integrated with the whole medical care system. Appears to be potential for reducing demands on scarce medical manpower and increasing patient satisfaction through effective organization of the phone service and the use of specially trained personnel to handle certain classes of calls.

Determined that 50% of calls concern symptoms; 30% prescriptions; and 10% lab results. Doctors were shown to be very variable in the ways they dealt with symptom calls. This makes it difficult to predict disposition of symptom calls using only patient, disease, and situational variables. However, it is imperative to understand the underlying factors because this behavior has implications for the cost and quality of medical care. Program was attempting to minimize use of doctor time in handling prescription requests by substituting clerical and ancillary personnel. A similar approach for handling lab and x-ray results would also be desirable.

Hackett, T. P., Cassem, N.H., and Raker J.W. "Patient Delay in Cancer," New England Journal of Medicine, Vol. 289 (July 1973), pp. 14-20.

Authors investigate reasons for delay in seeking care. Worry about condition seems to reduce delay more than physical pain. Delay appears conscious and deliberate and not due to failure to perceive neoplasm or comprehend consequences. Better educated people respond more quickly than those with less schooling, but evidence is not available to credit traditional cancer education campaigns for this difference. Research is necessary on the psychology of delay.

Haefner, Don P. and Kirscht, John P. "Motivational and Behavioral Effects of Modifying Health Beliefs," Public Health Reports, Vol. 85, No. 6 (June 1970), pp. 478-484.

An examination of the "health belief model" as the best explanation for the health behavior undertaken by a person with no symptoms. The authors review some difficulties with the experimental support for the model.

This paper reports on a study to collect experimental data on the health belief model. Persons in the study were randomly assigned to one of three experimental groups or a control group. Each experimental group saw one of three films related to heart disease, cancer, or T.B. The findings basically supported the health belief model. Participant beliefs concerning their susceptibility to a given illness were consistently changed. However, whether positive, health-related actions resulted depended on the nature of the necessary actions. Personal practices and habits were not markedly influenced by the changes in belief.

______, et al. "Preventive Actions in Dental Disease, Tuberculosis, and Cancer," Public Health Reports, Vol. 82, No. 5 (May 1967), pp. 451-459.

Report of a nationwide survey in 1963 and 1964 on beliefs and actions concerning dental disease, tuberculosis, and cancer. Approximately 1500 adults were selected as a sample of the adult U. S. population in private households. Purpose was to determine whether there are certain subgroups in the population that consistently follow preventive health recommendations.

The experimental procedure, data, analyses, and implications are discussed in detail. One general result was that people of higher socioeconomic status (higher education, income, and occupation) consistently took more preventive actions than people of lower socioeconomic level. However, there were variations in the relationships and the underlying factors influencing beliefs and actions. Basic conclusions about effective ways to change general behavior could not be drawn. The authors suggest that an approach which focuses on children is the best strategy at this time. Recommendations for further research were made.

Hansen, Ann C. "Broken Appointments in a Child Health Conference," Nursing Outlook, Vol. 1, No. 7 (July 1953), pp. 417-419.

Study of race, weather, frequency of change of physicians, immunization status, and telephone availability as factors in broken appointment rate. Immunization status appeared significant, race was not significant, and other factors were of some significance. Illness was most frequent reason offered for broken appointments. Discusses changes made due to findings of study which resulted in 13% reduction in broken appointments.

Health Education Monographs. (Published quarterly by the Society for Public Health Education. See the section footnotes for specific references.)

A particularly useful source of current, up-to-date information in health education. Priority in the monographs, as stated by the editor, "is given to manuscripts which contribute to knowledge of health behavior and draw implications for program planning and evaluation; and to those manuscripts which detail the application of behavioral research in health planning and social action." Adaptation of health services to meet consumer needs and the development of individual and community initiative in achieving health goals are particular concerns.

Each issue also includes a section of citations, organized by subject matter, of current literature related to health education. Another section contains abstracts of dissertations in health education with information on how to obtain complete copies.

Health Resources Associates, Inc. Marketing Health Maintenance Organizations to Low Income Persons: A Case Study Approach. A Report Prepared for the Health Maintenance Organization Service, Department of Health, Education, and Welfare, Under Contract No. HSM 110-72-316 (July 1973).

Identifies and evaluates the marketing and enrollment strategies for low-income persons used by ten HMO and other prepaid health plans. Both planning and implementation strategies are included and are evaluated and compared. Designed to aid Federal, State, and local agencies responsible for administering programs for low-income persons as well as those who are actually marketing health plans. Seven major elements are assessed: contract negotiations between government agencies and health plans; the target populations; the medical benefits being offered; the location of medical services; the price; the promotional techniques; and, the actual enrollment procedures.

Korsch, B. M. and Negrete, V. F. "Doctor-Patient Communication," Scientific American, Vol. 227, No. 2 (August 1972), pp. 66-74.

Study of doctor-patient communication as it relates to patient response to medical treatment and advice. Analyzed 800 visits to a pediatric walk-in clinic by 800 different mothers using audio tape recording. Mothers were questioned concerning expectations and reactions to the visit immediately afterwards and later to determine if mothers had complied with physician's instructions. Major complaint was physician not showing enough interest in mother's concern for the child. Of mothers highly satisfied with visit, 53.4% complied completely compared to 16.7% of highly dissatisfied mothers.

Kucha, Deloros H. Guidelines for Implementing An Ambulatory Consumer Health Information System: A Handbook for Health Education. U. S. Army-Baylor University Graduate Research Series, 1973.

Designed to be used for planning or restructuring a health education program. A useful handbook with guidelines and steps clearly defined and presented. Strong on management concepts, particularly the systems approach for problem-solving and decision-making. Included are chapters on assessment of learning needs, planning, resources (especially the development of resource and media centers), and evaluation.

Leventhal, Howard, "Changing Attitudes and Habits to Reduce Risk Factors in Chronic Disease," American Journal of Cardiology, Vol 31 (May 1973), pp. 571-580.

Well-documented discussion of major factors involved in adult behavior change. Includes basic steps in the development of preventive health education programs as well as discussion of the use of mass media techniques and interpersonal influence. Makes specific recommendations concerning the development of preventive approaches for children.

Luntz, G. R. W. N. and Austin, R. "New Stick Tests for P.A.S. in Urine: Report on Use of 'Phenistix' and Problems of Long-Term Chemotherapy for Tuberculosis," British Medical Journal, No. 5187 (June 4, 1960), pp. 1679-1684.

Study to detect frequency of default of outpatients from tuberculosis regimen using urine test by phenistix. Failure rate of compliance with the regimen increased from 18% on chemotherapy less than one year to over 65% in those over four years. Suggests that an important cause of nonadherence is lack of continuity of supervision by one physician and that adherence is more likely when physician impresses regularity of drug taking and consequences of neglecting treatment on patient.

Lasagna, L. "Fault and Default," New England Journal of Medicine, Vol. 289, No. 5 (August 2, 1973), pp. 267-268.

Editorial on physician failure to recognize possibility of patient noncompliance with medical advice. Recommends physicians alert selves to the problem and spend more time increasing the likelihood of adherence by patients.

Levine, Peter H. and Britten, Anthony F. H. "Supervised Patient-Management of Hemophilia: A Study of 45 Patients with Hemophilia A and B," Annals of Internal Medicine, Vol. 78, No. 2 (1973), pp. 195-201.

Forty-five hemophiliac patients were instructed in management of bleeding problems. Compared with the previous year, there was a 74% reduction in absenteeism, 89% reduction in hospitalization days, 76% reduction in outpatient visits, and 45% decrease in health care costs. Alternative to relying on highly trained personnel to perform routine procedures is self care and care by family at home. Family members were given a lecture on theory of treatment, availability of preparations, complications of therapy, and then further training and practice.

MacColl, Caroline S. and Smith, Harvey C. *Health Education in the Health Maintenance Organization*. A Monograph Prepared for the Department of Health, Education, and Welfare, 1974.

An analysis of the role health education should play in HMO's. The HMO Act, Public Law 93-222, and the Senate and House Committee Reports on the Act are discussed with particular emphasis on the requirements and rationale for a health education benefit in HMO's. Characteristics stressed were development of patients' independence and ability to keep themselves healthy and to successfully manage chronic illnesses. The basic components, development, and implementation of an HMO health education program are presented and examples of actual programs are given. Practical requirements for selecting an HMO health educator, for maintaining cost control, and for monitoring the progress of a health education program are also detailed.

Maddock, Jr., R. K. "Patient Cooperation in Taking Medicines," *Journal of the American Medical Association*, Vol. 199, No. 3 (January 16, 1967), pp. 137-140.

Study of 50 outpatient clinic patients to determine extent of cooperation with two different drug treatments for tuberculosis -- 30% of patients taking INH and 42% taking PAS were uncooperative. Discusses difficulties of relying on prescription pick-up date, patient interview, clinic attendance, and response to therapy to determine compliance. Also notes that patients may cooperate in taking one drug but not another when two are prescribed.

Marston, M.V. "Compliance with Medical Regimens: A Review of the Literature," *Nursing Research*, Vol. 19, No. 4 (July-August 1970), pp. 312-323.

Provides a summary of studies of compliance behavior. Reviews compliance measurement including drug excretion tests, pill counts, patient self-report, direct observation, remaining under medical supervision, and follow-through of referrals. Also reviews factors associated with compliance including demographic variables, illness variables, and social-psychological variables. Concludes that literature review presents no clear picture of compliance determinants but suggests an interaction of many variables as explanation of compliance behavior.

Miller, L. V. and Goldstein, J. "More Efficient Care of Diabetic Patients in a County-Hospital Setting," *New England Journal of Medicine*, Vol. 286, No. 26 (June 29, 1972), pp. 1388-1391.

Telephone answering service and screening by nurse practitioners or residents prior to emergency room admission of diabetic patients was instituted to remedy poor access to timely, appropriate medical advice. Resulted in reduction of emergency room visits by diabetics and a decline in hospital admissions, so that while clinic population increased from 4,000 to 6,000 in two years, admissions decreased from 2,680 to 1,250.

Mintzberg, Henry. *The Nature of Managerial Work*. New York: Harper and Row, Publishers, 1973.

A study of the question, "What do managers do?" Very readable. Designed for a wide audience including academics and students as well as practicing managers and staff people. Presents data based on available behavioral research and on a study of five executives in which the author followed each for a week. Identifies the wide range of relationships which comprise the manager's role in contemporary organizations. Analyzes the behavioral and cognitive skills involved in being an effective manager, with the view that unless these skills are recognized and identified they will not be learned.

Mitchell, J.A. "Compliance with Medical Regimen: An Annotated Bibliography," *Health Education Monograph*, Vol. 2, No. 1 (Spring 1974), pp. 75-87.

Review of articles concerning demographic, social, and economic factors as related to compliance to medical regimens. Includes general articles and disease-specific articles on tuberculosis, streptococcal disease and rheumatic fever, diabetes, psychiatric disease, obesity, anemia, malaria, arthritis, and gastrointestinal disease.

Morris, N.M., Hatch, M.H. and Chipman, S.S. "Alienation as a Deterrent to Well-Child Supervision, *American Journal of Public Health*, Vol. 56, No. 11 (November 1966), pp. 1874-1882.

Article deals with medically indigent groups and their feelings of powerlessness and social isolation. These feelings have adverse effect on care-seeking behavior. Services must be examined in light of the implications of alienation if one wants to influence the use of preventive services.

Mumford, E. "The Noncompliant Patient", *Medical Dimensions*, Vol. 3, No. 9 (November 1973) pp. 18-22.

Discusses many of the circumstances and reasons related to noncompliance such as the competition of advice of friends and advertisements with that of the physician, cost of prescriptions, competing priorities in the patient's life, patient's lifestyle, and misunderstanding or lack of comprehension of instructions. Suggests techniques for physicians to use to alleviate these problems including asking for feedback from the patient to assure understanding, using diagrams and written instructions, and others.

Oakes, T.W., *et al*. "Family Expectations and Arthritis Patient Compliance to a Hand Resting Splint Regimen", *Journal of Chronic Diseases*, Vol. 22 (April 1970), pp. 757-764.

Demonstrated the strong effect of family expectation on arthritis patients' adherence to splint regimen. Suggests that those who prescribe such regimens consider patients' perceptions of family expectation of health care procedures since those who perceived lowest expectations by family of wearing the splint wore it the least and those where family expectation was high wore it more often.

Porter, A.M.W. "Drug Defaulting in a General Practice," *British Medical Journal*, No. 5638 (January 25, 1969), pp. 218-222.

Study of patients observed in general practice for three years using tablet markers in urine tests and pill counts to determine adherence to regimen. Suggests that the number of different drugs prescribed be minimized and that those taken least often and with fewest side effects are preferred. Also suggests medicaton may be taken more reliably when prescribed by patient's own physician.

Power, L. "New Approaches to the Old Problem of Diabetes Education," *Journal of Nutrition Education*, Vol. 5, No. 4 (October-December 1975), pp. 230-232.

Discusses general problems involved in health care and education but focuses on diabetes. Suggests expanding use of personnel other than traditional professionals for improving provision of health care. Describes specific techniques used in a diabetes education program.

The President's Committee on Health Education. *The Report of the President's Committee on Health Education*. Department of Health, Education, and Welfare, Health Services and Mental Health Administration, 1973.

Defines the scope of health education and identifies and assesses the current areas of activity. Reviews the changing needs for health education and discusses the purposes and challenges. Elaborates on major areas of health education need and on major groups with unique needs in health education. Concludes with findings and specific recommendations in support of health education. The major recommendation is for the creation of a National Center for Health Education to stimulate, coordinate, and evaluate health education programs.

Riley, C.S. "Patient's Understanding of Doctor's Instructions," *Medical Care*, Vol. 4, No. 1 (January-March 1966), pp. 34-37.

Questionnaire was administered to 162 persons to see how they would interpret certain instructions physicians might give. Revealed that what physicians considered were clear-cut instructions were often ambiguous to patients.

Rockart, J.F. and Hoffman, P.B. "Physician and Patient Under Different Scheduling Systems in a Hospital Outpatient Department," *Medical Care*, Vol. 7, No. 6 (November-December 1969), pp. 463-470.

Scheduling systems greatly affect patient waiting time. Also assignment at time of appointment of patient to specific physician is significant element in effectiveness of appointment system.

Scheduling methods range from block system (all patients to arrive before start of clinic) to individual appointment time system. Physician lateness is worst in block system. Patient waiting time follows pattern set by physician lateness. As appointments become more personalized there is a tendency for physician and patient to act more responsibly toward each other--physician arrives more punctually and patient does too. The entire system works better when patients are assigned to particular doctors.

Rogers, Everett M. with Shoemaker, F. Floyd, *Commu[illegible]ation of Innovations*. 2nd. ed. New York: The Free P[illegible]s, 1971.

An analysis of the dispersion of innovations through a given society based on some 1,500 publications dealing with diffusion research and human communication. The primary concern of the book is how social systems are changed through the diffusion of new ideas--an important issue because of the rate of change in the world. As each element of diffusion and adoption is discussed, actual examples are given and analyzed. Cross-cultural differences and similarities in the diffusion of innovations are specifically highlighted.

Designed for change agents whose role is to diffuse innovations and for social scientists with an academic interest in a detailed analysis of communication and change.

Rosenberg, S.G. "Patient Education Leads to Better Care for Heart Patients," HSMHA Health Reports, Vol. 86, No. 9 (September 1971), pp. 793-802.

An organized patient education approach was used with a group of patients with congestive heart failure. Suceeded in reducing number of patients readmitted from 23 out of 50 patients and 35 readmissions to 6 patients and 12 readmissions. Patients receiving education showed greater knowledge of illness and treatment and showed much greater adherence to regimen.

Sackett, D.L., et al. "Randomised Clinical Trial of Strategies for Improving Medication Compliance in Primary Hypertension," Lancet (May 31, 1975), pp. 1205-1207.

Improving convenience of care and educating patients about hypertension and treatment were two strategies used to see if compliance with medical regimen could be increased. Mastery learning program was effective in teaching patient about illness and treatment, but neither increased knowledge nor attempts to increase convenience of care improved compliance.

Schroeder, S.A. "Lowering Broken Appointment Rates at a Medical Clinic," Medical Care, Vol. 11, No. 1 (January-February 1973), pp. 75-78.

Three methods were used to reduce broken appointment rates in a lower socioeconomic group of patients at George Washington University Medical Clinic in Washington, D.C. Control group which received no special reminder of appointment had broken appointment rate of 24.6%; those reminded by post card, 13.7%; those reminded by phone call, 19.5%; and, those reminded by physician phone call, 17.6%.

High rate of broken appointments interferes with continuity of care, scheduling, and proper allocation of manpower. The G.W. University Medical Clinic baseline broken appointment rate of 25% was lowered to 13-14% simply by reminding each patient of appointment by phone or postcard.

Simmons, Jeannette (ed.). "Making Health Education Work," American Journal of Public Health, Vol. 65, October 1975, Supplement.

An analysis of health education as a part of health program development, with primary emphasis on programs for low income and minority groups. Based on information, ideas, and advice from over 100 health education programs. Included are suggestions for strengthening health education programs as well as an analysis of the problems and deficiencies which have occurred. Designed for those who administer, pay for, and use health education programs as well as those who are actually providing health education services.

Stimson, G.V. "Obeying Doctor's Orders: A View from the Other Side," Social Science and Medicine, Vol. 8, No. 2 (February 1974) pp. 97-104.

Discusses role of patient as decision-maker in determining whether to adhere to prescribed regimen. Patient's perspective of illness and treatment, expectations and evaluation of physician, personal experience with drug, and other factors affecting patient's decisions are suggested as useful considerations regarding the problem of medication use.

Warnecke, Richard B., et al. "Contact with Health Guides and Use of Health Services Among Blacks in Buffalo," Public Health Reports, Vol. 90, No. 3 (May-June 1975), pp. 213-222.

A review and analysis of the results of a program begun by the Erie County Department of Health in 1967 to improve community use of health services. The program was based on the knowledge that personal communication, as opposed to all types of media, is the best means of obtaining participation and that this personal communication is most effective when the person making contact is culturally and socioeconomically similar. Six health guide units, composed of 80 black, middle-aged, women as health guides were set up in the inner city in areas of predominantly low socioeconomic black populations. The health guides were recruited from the neighborhoods in which they worked and did not need advanced education. They were trained to discover health problems and recommend the type of service suited to the problem. Their orientation was to teach people to secure the services for themselves.

The relationship between the use of these health guides and the use of eight services was measured. Positive correlations were found. Also determined was that the health guides seemed to be as effective as other, more highly trained and highly paid, health professionals.

Wertheimer, A.I., Ritchko, C., and Dougherty, D.W. "Prescription Accuracy: Room for Improvement," Medical Care, Vol. 11, No. 1 (January-February 1973), pp. 63-71.

Nearly 10% of 223 prescriptions ordered by physicians were dispensed with some type of irregularity (e.g. instructions, product, or strength). Suggests physicians request patients to bring medication to office visits to check accuracy.

Williams, Allan F. and Wechsler, Henry. "Interrelationships of Preventive Actions in Health and Other Areas," Health Service Reports, Vol. 87, No. 10 (December 1972), pp. 969-976.

A review of what is known about preventive health behavior and a report on two studies to determine the extent to which different kinds of preventive behavior are interrelated. The results showed that health actions varied in the extent to which they were related to other health actions. Also, there was a lack of correlation between going to a physician for a checkup and practicing most preventive actions. The experimental results, the pattern of interrelationships, and the implications for preventive health programs are discussed in detail.

Health Education Instrument

This is an instrument to describe the health education elements in health programs. The range of health programs and basic problems is so wide, the variations in providers, resources, audience behavior, knowledge and attitudes so great as to make comparisons of educational strategies difficult. However, this instrument assumes that there are basic principles and processes underlying all educational approaches and is being utilized to describe the educational process in a variety of programs.

The information is being collected by an APHA committee composed of members of all twenty-one APHA sections and will be utilized to examine current directions in health education. All persons who are interviewed will receive information regarding the data generated by the survey.

Health Program Profile

Note: All reponses are confidential and will not be utilized without the express consent of the interviewee.

Interviewer:________________________

Date:______________________________

1. Name of program/project________________________________
2. Name of director/title_________________________________
3. Address____
4. Telephone No.____
5. Names and titles of persons interviewed.

____

____

____

Part I - General Overview

Part I (questions 6-9) deals with the total health program of the institution in which the health education activities are located.

6. Description of total health program.

   a. Type of institution (health service, school, employer, etc.)

   b. Describe the activities of the health program.

c. List the most frequent medical or other health problems identified by the health program:

7. Audience to whom program is directed. Check as many as are applicable.

a. Estimated size of the target audience.

1. 10 individuals or less. ______
2. 10 - 50 individuals ______
3. 50 - 100 " ______
4. 100 - 150 " ______
5. Over 150 " ______

Please estimate size if over 150 ______

b. Age of target audience.

1. Under 5 years of age ______
2. 5 - 9 " " ______
3. 10 - 19 " " ______
4. 20 - 29 " " ______
5. 30 - 39 " " ______
6. 40 - 49 " " ______
7. 50 - 59 " " ______
8. 60 - 69 " " ______
9. 70 - 79 " " ______
10. 80 - 89 years of age and over ______

c. Sex of target audience

Male____ Female_____

d. List those health problems addressed specifically by your program,

e. Other factors including but not limited to economic status, minority/ethnic classification, occupation. geographical area, and educational levels.

8. Budget for total program:________________________________

Sources of funding:________________________________

____

____

____

____

9. Describe the size and composition of the major policy-making group.

a. Is the target audience represented within the policy-making group

Yes_____ No_____

b. If yes, in what form does this representation take place.

Part II - Specific Health Education Program

The remainder of the instrument deals with the specific health education activities of the project.

10. We would like to make a distinction between programs that have a planned, integrated health education component versus those that are separate activities developed through the individual initiatives of a few people. Is there a systematic, coordinated health education program?

11. List the major areas of your health education activities.

Note: The information requested in questions 12 through 23 should be collected for each separate health education activity listed in question number 11.

12. Identify the target audience.

Check if applicable.

Patient_____
Family______
Students____
Employees___
Agency Staff____
Staff of other agencies____
General community____
Other, please explain.

a. Size of the target audience

b. Age

c. Sex

d. Health problems

e. Other

f. Do all recipients or only selected individuals receive health education services?

All_____Selected Individuals______

(Identify below)

13. Describe the basic elements of the health education activity including its educational objectives.

Note to interviewer: Does the activity go beyond minimal information giving (one-way) to an exchange of information (two-way communication)? Yes____ No____

14. Describe who carries out the activity.

Check if applicable.

Administrator____
Dentist____
Nutritionist_____
Teacher____
School health educator____
Receptionist_____
Physician_____
Indicate physician specialty____

Registered Nurse____
Licensed Practical Nurse______
Outreach worker_____
Community health educator_____
Aide____
Social worker_____

Other:

a. Describe the health education duties of each person checked above.

b. Do they now or did they in the past receive special training for these health education duties? Yes___ No___

If yes, please describe the types of training provided and the persons who conduct or conducted the training.

15. Describe the methods and materials utilized. Check if applicable.

Group Discussion_____
Audio-visual_____
Counseling_____
Programmed instruction____
Mass media_____
Role play or simulation____
Classes____
Educational prescription____
Videotape_____
In-service training_____

Other:

16. How does the target population learn about the activity?

17. Where does the activity take place? Is it accessible to a majority of the target population?

18. Describe the evaluation procedures for this activity.

1. Are your objectives written in behavioral terms? Yes____No_____

2. Is the activity evaluated on the basis of these behavioral objectives.

3. If the activity is not evaluated on the basis of behavioral objectives, what are the criteria used to evaluate its effectiveness?

B. Are cost-benefit or cost-effectiveness analyses performed? If yes, please explain. Yes____ No____

C. Is there a mechanism for consumer evaluation of the program? If yes, please explain. Yes____ No____

D. Other evaluation mechanisms. Please explain.

Note to interviewer: Please indicate whether evaluation procedures are informal ____ or formal ____.

19. Is one staff person charged with primary responsibility for the project Yes____ No____

a. What is that person's title and what position does he hold within the hierarchy of the organization?

b. What responsibility does this individual have for coordinating the health education activity with other activities of the agency?

20. Is the health education activity integrated into the total health program? If so, please explain how this is accomplished.

a. Are health education activities reportable and recorded?
Yes____ No____

b. Are health education activities discussed at staff and/or other meetings on a regular basis? Yes____ No____

21. Describe the budget of the health education activity.

a. List amounts by line item category.

b. List titles of staff members included in the budget.

c. List the percentage of time of individual staff members which is devoted to the health education activity.

d. Is the budget
increasing_____
decreasing_____
remaining the same_____

22. Describe the history of the project. How was it planned initially and what changes have taken place in the course of its development.

a. Describe who does the planning.

1. Is the target population included in the planning process? If so, please explain.

b. Describe the data utilized. Check if utilized.

Statistics____
  Morbidity____
  Mortality____
Census data____
Outpatient records____
Consumer interviews/surveys____
Agency reports____
Other:

School reports____
Court reports____
Agency reports____
Literature search____
Physical exams____
Case histories____
Outside consultation____

c. Describe the methods utilized for establishing priorities.

d. Describe the effects of cost factors on the planning process including establishment of priorities.

e. List the chronology of events which took place in the development and implementation of the program.

f. Was there a written plan for the program?

23. Is the health education activity tied in or coordinated with the activities of other agencies and if so in what ways?

Participation in planning ____
Referrals ____
Technical advice ____
Financial assistance ____
Provision of actual health education services ____

Manpower ____
Materials ____
Physical facilities ____

Other:

24. Please list any additional information which you feel is important about the program but which has not been included in the survey questions.

Preliminary Rating Scales of Programming Sophistication

Based in part upon:

Green, L.W., Marjorie A.C. Young, and Ralph Sollad, Criteria and Rating Scales for the Assessment of Program Structure and Process. Macro Systems, Inc. New York, New York. Consultation Report for the United States Department of Health, Education and Welfare, 1972.

1. Scale 0 = Little or no attempt to collect data on problem or population.

1 = Some attempt to collect, but no attempt to consolidate or use data; or data collected on population but not on problem, or problem but not population.

2 = Reasonable efforts to collect and consolidate data from available sources on both population characteristics and problems.

2. Scale 0 = No evidence of serious review of scientific literature on the problem prior to planning.

1 = Some evidence of literature review prior to planning but not recorded or used in the planning; or literature systematically reviewed on population but not on problem, or on problem but not the population.

2 = Clear documentation of previous research and experience pertinent to the problem and population.

3. Scale 0 = No effort to interview other agency representatives in the community who may have had prior experience with the problem.

1 = Some effort to interview others, but some obvious omissions, or some clearly wasteful overlap in services.

2 = Rather thorough survey of available resources and individuals with prior experience with the problem in the community.

4. Scale 0 = No effort to consult other sources and assistance where specific data, literature, resources or experience were lacking.

1 = Some assistance or consultation obtained but not actively sought or not obtained until after the planning stage.

2 = Consultation used where specific data, literature, resources or experience were lacking.

5. Scale 0 = General idea as to target population for program.

1 = Agreement on some but not all of the following: geographic boundaries, ethnic groups, socioeconomic groups and age groups to be served.

2 = Written identification of specific target groups.

6. Scale 0 = Planning based exclusively on random observation of behavior of the "target" groups.

1 = Planning based on presumed knowledge, attitudes, values and social relationships of the target populations.

2 = Planning based on concrete data concerning knowledge, attitudes, values and social relationships of target groups.

7. Scale 0 = No representatives from the target populations were actively included in the planning.

1 = Nominal representation of target population in planning but not in sufficient numbers or positions to affect decisions; or too late in the planning; or their suggestions were ignored or discarded.

2 = Adequate, active and early participation of representatives of the target populations.

8. Scale 0 = Program plan announced to the community at large only after program was underway.

1 = Program plan announced to the community after grant, contract or budget was received.

2 = Community kept informed of progress on a continuing basis.

9. Scale 0 = No representation of participating agencies in planning.

1 = Nominal participation only.

2 = Adequate, active and early participation of participating agencies throughout the planning.

10. Scale 0 = Representation from top level staff in planning.

1 = Representation from top and middle levels of staff but not from lower levels, or only token participation of lower levels.

2 = Adequate, active and early participation of representatives from all levels of staff.

11. Scale 0 = No attempt to inform personnel until after plans were complete.

1 = Only middle and top level personnel kept informed during planning.

2 = All personnel kept fully informed throughout the planning.

12. Scale 0 = No objectives explicitly identified for program.

1 = Objectives stated entirely from the perspective of the agency, or in very vague terms.

2 = Objectives stated in concrete, numerical terms and in terms of target population's goals.

13. Scale 0 = Objectives general and verbalized by staff.

1 = Global goals written into general plan.

2 = Objectives are clear cut statements of intended accomplishments including the nature and scope of results to be achieved, with whom, where and when.

14. Scale 0 = Objectives have no priority.

1 = Objectives have general priority ranking.

2 = Objectives are ranked according to agreed upon priorities.

15. Scale 0 = Health education initiated with only vague relationship to overall agency program goals.

1 = Health education objectives parallel general program goals and chronology.

2 = Systematic planned relationship between specific health education objectives and the goals of the agency.

16. Scale 0 = No specific plan for recruitment of consumers or users of services at time services began.

1 = Recruitment plans limited to mass media announcements.

2 = Well developed outreach plans to recruit specific target groups according to priorities dictated by objectives.

17. Scale 0 = Initial publicity or promotion of services directed more to low priority target groups than to high priority groups.

1 = Initial promotion of services spread equally without regard to priority groups or without regard to limitations of services.

2 = Initial promotion efforts directed primarily at high priority groups and without creating more demand for services that can adequately be met at the outset.

18. Scale 0 = No recruitment or training for health education skills before program services began.

1 = Recruitment of staff and/or volunteers before program initiated, but not training.

2 = Recruitment and training of staff and volunteers are continuous.

19. Scale 0 = Staff assigned health education duties without any orientation to overall program objectives, philosophy and limitations.

1 = Staff assigned with minimal written orientation material.

2 = Staff involved in mutual orientation program at which responsibilities and functions were assigned within the context of program objectives, philosophy, service components and limitations.

20. Scale 0 = Specific staff functions not indicated beyond program objectives.

1 = Job descriptions include specific responsibilities, but not related to program objectives or service components.

2 = Staff functions clearly delineated in relation to program objectives.

21. Scale 0 = No clear designation of organizational hierarchy or lines of authority.

1 = Hierarchy designated by an organization chart, but no clear indication of supervisory responsibilities.

2 = Supervisory responsibilities clearly delineated at each level of organization.

22. Scale 0 = No vertical or horizontal communication between staff members.

1 = Communication and feedback adequate within the organization.

2 = Methods of communication and feedback between staff systematically developed and very effective.

23. Scale 0 = No efforts to determine in advance appropriate methods or materials for audience.

1 = Some efforts to determine experience of others in utilization of materials.

2 = Pre-test approaches on target audience.

24. Scale 0 = Utilization of available materials without application of specific criteria.

1 = Systematic analysis of available materials utilizing specific criteria.

2 = Selected use of available materials with planned capability to meet specific program requirements.

25. Scale 0 = Evaluation considered during planning and preparation but no written plan or design.

1 = General design but no specific criteria.

2 = Evaluation design and sampling plan well developed prior to implementation of the program.

26. Scale 0 = No mechanism for determining recipients reaction to program.

1 = Sporadic effort to ascertain program recipient's - reaction.

2 = Formalized mechanism for ascertaining recipient's reaction.

27. Scale 0 = No mechanism for feedback from staff concerning program operations.

1 = Mechanism which provides sporadic feedback from staff concerning program operations.

2 = Formalized and systematic mechanisms for providing feedback and development of responses based on results of feedback.

28. Scale 0 = No specific health education budget.

1 = Specific resources including salaries are assigned to health education.

2 = Identifiable, realistic budget developed on the basis of the health education program plan.

29. Scale 0 = No effort to develop outside resources.
1 = Sporadic utilization of outside resources.
2 = Systematic development and utilization of outside resources based on program plan.

30. Scale 0 = Little to no communication with other agencies.
1 = Communication and feedback with cooperating agencies is adequate.
2 = Systematic and effective methods developed for communication and feedback with cooperating agencies.

31. Scale 0 = No referral sources officially contacted prior to program initiation.
1 = Referral sources contacted but not prepared to provide or receive referrals at time of program opening.
2 = Referral sources providing and/or receiving referrals as of opening of program.

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